

KV-4000

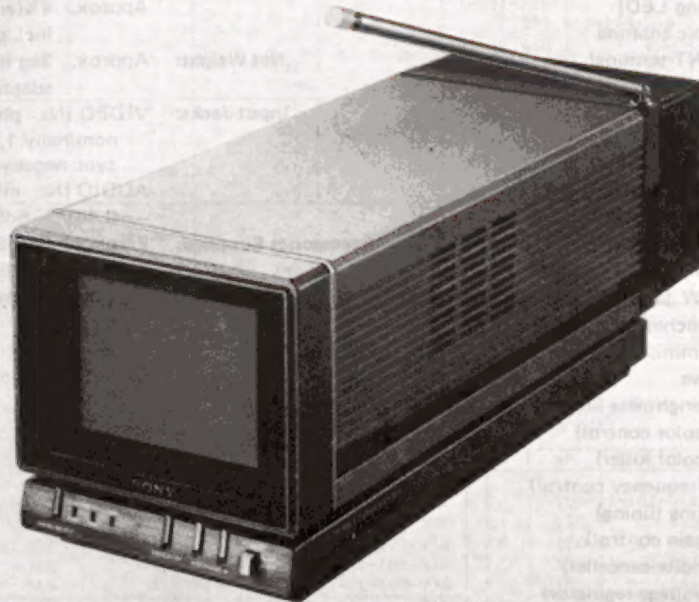
AC-123W/BCP-5W

US Model

Chassis No. SCC-285A-A

Canadian Model


Chassis No. SCC-285B-A




TRINITRON®
COLOR TV



ATTENTION AU COMPOSANT AYANT RAPPORT À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÉS PAR UN TRAMÉ ET UNE MARQUE  SUR LES DIAGRAMMES SCHÉMATIQUES, LES VUES EXPLOSÉES ET LA LISTE DES PIÈCES SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT. NE REMPLACER CES COMPOSANTS QUE PAR DES PIÈCES SONY DONT LES NUMÉROS SONT DONNÉS DANS CE MANUEL OU DES SUPPLÉMENTS PUBLIÉS PAR SONY. LES RÉGLAGES DU CIRCUIT QUI SONT CRITIQUES POUR LA SÉCURITÉ DE FONCTIONNEMENT SONT IDENTIFIÉS DANS CE MANUEL. SUIVRE LES PROCÉDURES QUAND LES COMPOSANTS CRITIQUES SONT REMPLACÉS OU LE FONCTIONNEMENT IMPROPRE EST SUSPECTÉ.

SAFETY-RELATED COMPONENT WARNING !!

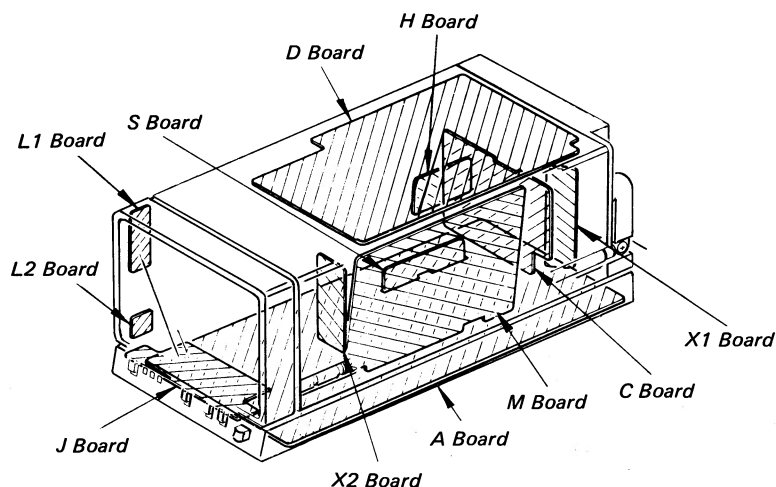
COMPONENTS IDENTIFIED BY SHADING AND MARK  ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY. CIRCUIT ADJUSTMENTS THAT ARE CRITICAL TO SAFE OPERATION ARE IDENTIFIED IN THIS MANUAL. FOLLOW THESE PROCEDURES WHENEVER CRITICAL COMPONENTS ARE REPLACED OR IMPROPER OPERATION IS SUSPECTED.

SONY®

SERVICE MANUAL

SPECIFICATIONS

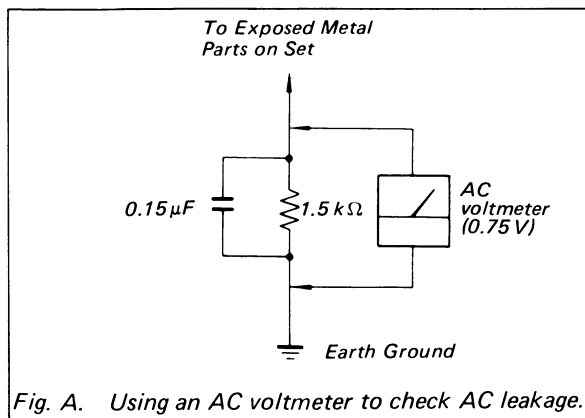
Television System:	American TV standards, Canadian TV standards	Anode Voltage:	11 kV at zero beam current (no adjustment)
Color System:	NTSC	Power Requirements:	12V dc, 120V ac 60Hz using with ac adaptor AC-123W (supplied)
Picture Tube:	3.7" (screen measured diagonally), 50° deflection TRINITRON system	Power Consumption:	23W ac (max), 12W dc (12V)
Semiconductors:	transistors, FETs, ICs and diodes (including LED)	Dimensions:	Approx. 120(w) x 119(h) x 288(d) mm Approx. 4¾(w) x 4¾(h) x 11⅜ (d) inches incl. projecting parts and controls
Antennas:	UHF/VHF telescopic antenna UHF/VHF EXT ANT terminal 75 ohms, mini jack	Net Weight:	Approx. 3kg (6 lb 10 oz) excl. ac power adaptor or battery case
Channel Coverage:	VHF channels: 2-13 UHF channels: 14-83	Input Jacks:	VIDEO IN: phono jack nominally 1.0V(p-p), NTSC, 75Ω, sync negative AUDIO IN: mini jack 0.44V (-5dB), high impedance
Intermediate Frequencies:	Picture i-f carrier: 45.75MHz Color subcarrier: 42.17MHz Sound i-f carrier: 41.25MHz	Accessories Supplied:	Earphone (ME-21) External antenna connector (U-V MIXER) AC power adaptor (AC-123W) Battery case (BCP-5W) Carrying case Instruction manual
Sound System:	4.5MHz intercarrier Output power: 0.5W (at 10% harmonic distortion) Speaker: 7.7cm(3 inches) dia, 16 ohms EARPHONE jack: mini, 8Ω		
Video System:	R.G.B. cathode drive		
Automatic Controls:	ABL (automatic brightness limiter) ACC (automatic color control) ACK (automatic color killer) AFC (automatic frequency control) AFT (automatic fine tuning) AGC (automatic gain control) ANC (automatic noise canceller) AVR (automatic voltage regulator)		

CIRCUIT BOARDS LOCATION

SAFETY CHECK-OUT (US Model)

After correcting the original service problem, perform the following safety checks before releasing the set to the customer:

1. Check the area of your repair for unsoldered or poorly-soldered connections. Check the entire board surface for solder splashes and bridges.
2. Check the interboard wiring to ensure that no wires are "pinched" or contact high-wattage resistors.
3. Check that all control knobs, shields, covers, ground straps, and mounting hardware have been replaced. Be absolutely certain that you have replaced all the insulators.
4. Look for unauthorized replacement parts, particularly transistors, that were installed during a previous repair. Point them out to the customer and recommend their replacement.
5. Look for parts which, though functioning, show obvious signs of deterioration. Point them out to the customer and recommend their replacement.
6. Check the line cord for cracks and abrasion. Recommend the replacement of any such line cord to the customer.
7. Check the condition of the monopole antenna (if any).
Make sure the end is not broken off, and has the plastic cap on it. Point out the danger of impalement on a broken antenna to the customer, and recommend the antenna's replacement.
8. Check the B+ and HV to see they are at the values specified. Make sure your instruments are accurate; be suspicious of your HV meter if sets always have low HV.
9. Check the antenna terminals, metal trim, "metallized" knobs, screws, and all other exposed metal parts for AC leakage. Check leakage as described below.



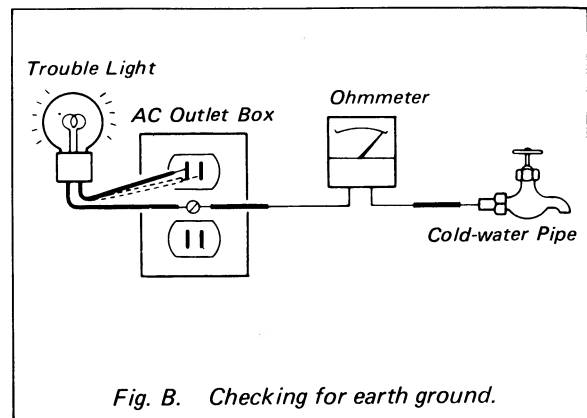
LEAKAGE TEST

The AC leakage from any exposed metal part to earth ground and from all exposed metal parts to any exposed metal part having a return to chassis, must not exceed 0.5 mA (500 microamperes). Leakage current can be measured by any one of three methods.

1. A commercial leakage tester, such as the Simpson 229 or RCA WT-540A. Follow the manufacturers' instructions to use these instruments.
2. A battery-operated AC milliammeter. The Data Precision 245 digital multimeter is suitable for this job.
3. Measuring the voltage drop across a resistor by means of a VOM or battery-operated AC voltmeter. The "limit" indication is 0.75 V, so analog meters must have an accurate low-voltage scale. The Simpson 250 and Sanwa SH-63Trd are examples of a passive VOM that is suitable. Nearly all battery operated digital multimeters that have a 2 V AC range are suitable. (See Fig. A)

HOW TO FIND A GOOD EARTH GROUND

A cold-water pipe is guaranteed earth ground; the cover-plate retaining screw on most AC outlet boxes is also at earth ground. If the retaining screw is to be used as your earth-ground, verify that it is at ground by measuring the resistance between it and a cold-water pipe with an ohmmeter. The reading should be zero ohms. If a cold-water pipe is not accessible, connect a 60–100 watts trouble light (not a neon lamp) between the hot side of the receptacle and the retaining screw. Try both slots, if necessary, to locate the hot side of the line, the lamp should light at normal brilliance if the screw is at ground potential. (See Fig. B)



SECTION 1
OUTLINE

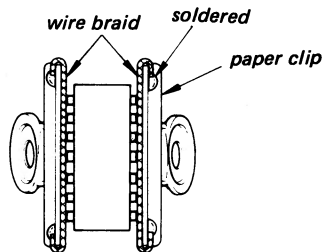
1-1. HANDLING PRECAUTIONS FOR MOS ICs

The following integrated circuits of KV-4000 are MOS ICs and are subject to damage from static discharges.

Ref. No.	Device No.	Function
IC101, 131 132, 133	TC4011BP	QUAD 2-INPUT POSITIVE NAND GATE
IC102	TC4022BP	DIVIDE-BY-8 COUNTER DIVIDER
IC134	TC4001BP or μ PD4001C	QUAD 2-INPUT POSITIVE NOR GATE

Precautions in Replacing MOS ICs

1. Store new ICs by inserting them into a polyester cushion (which is somewhat conductive), or wrapping it in aluminum foil, so that all the pins are at the same potential.
(The ICs should be stored in that manner until mounted on the circuit board.)
2. Effective methods for handling ICs.
 - Use a paper clip modified by soldering in a wire braid insert. (Fig. 1)
 - Take a short length of fine bare wire and wind it around the IC so that it shorts all the pins of the IC while it is still in the urethane-polyester cushion or aluminum foil. (Fig. 2)
 - When it is necessary to handle the IC with the fingers, do not touch any pin, and hold the IC at the ends of its plastic-package case. (Fig. 3)



Make sure that all the pins are in contact with the wire braid (all the pins will then be at the same potential).

Fig. 1

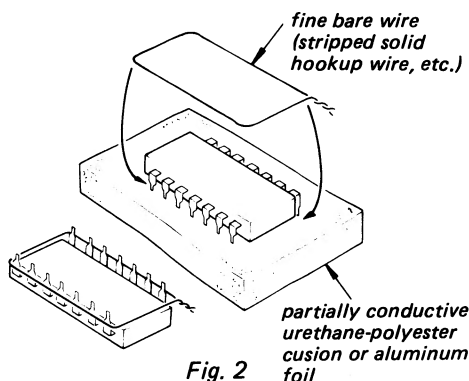


Fig. 2

3. Equalize any potential difference between the clothes, the tools in use, the work bench, the set being worked on, and the packaged IC by touching them all in succession with the hands or a conductive wire or tool.
4. Check the soldering iron for possible power-line leakage current. Make sure that there is no leakage path by connecting an ohmmeter to the tip of the soldering iron and the plug. If there is a leakage path, use some other soldering iron. (Fig. 4)
5. Method of Mounting
Insert the IC while holding it with the modified clip, and solder all the pins with the clip still shorting the pins. (Similarly, solder all the pins while the bare shorting wire is still wound around them.) Remove the clip or the bare shorting wire only after all the pins have been soldered.

DOs & DON'Ts

- DO discharge the packaged IC (and yourself) to the equipment chassis before removing it from its metal carrier or conductive foam packing.
- DO hold one hand on the chassis while installing the IC.
- DO use a low-leakage soldering iron equipped with a 3-wire (grounded) cord.
- DO use a non-metallic probe to check for loose connections around a CMOS IC.
- DON'T remove the IC from its metal carrier or conductive foam packing before you are ready to install it.
- DON'T use a soldering gun.
- DON'T use vacuum-type solder suckers.
- DON'T use freon-propelled cold sprays.
- DON'T walk around while holding an unprotected CMOS IC, particularly if the floor is carpeted.

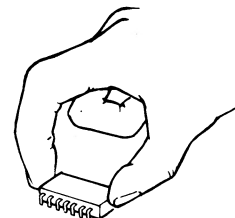


Fig. 3

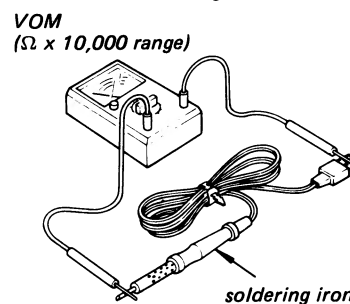
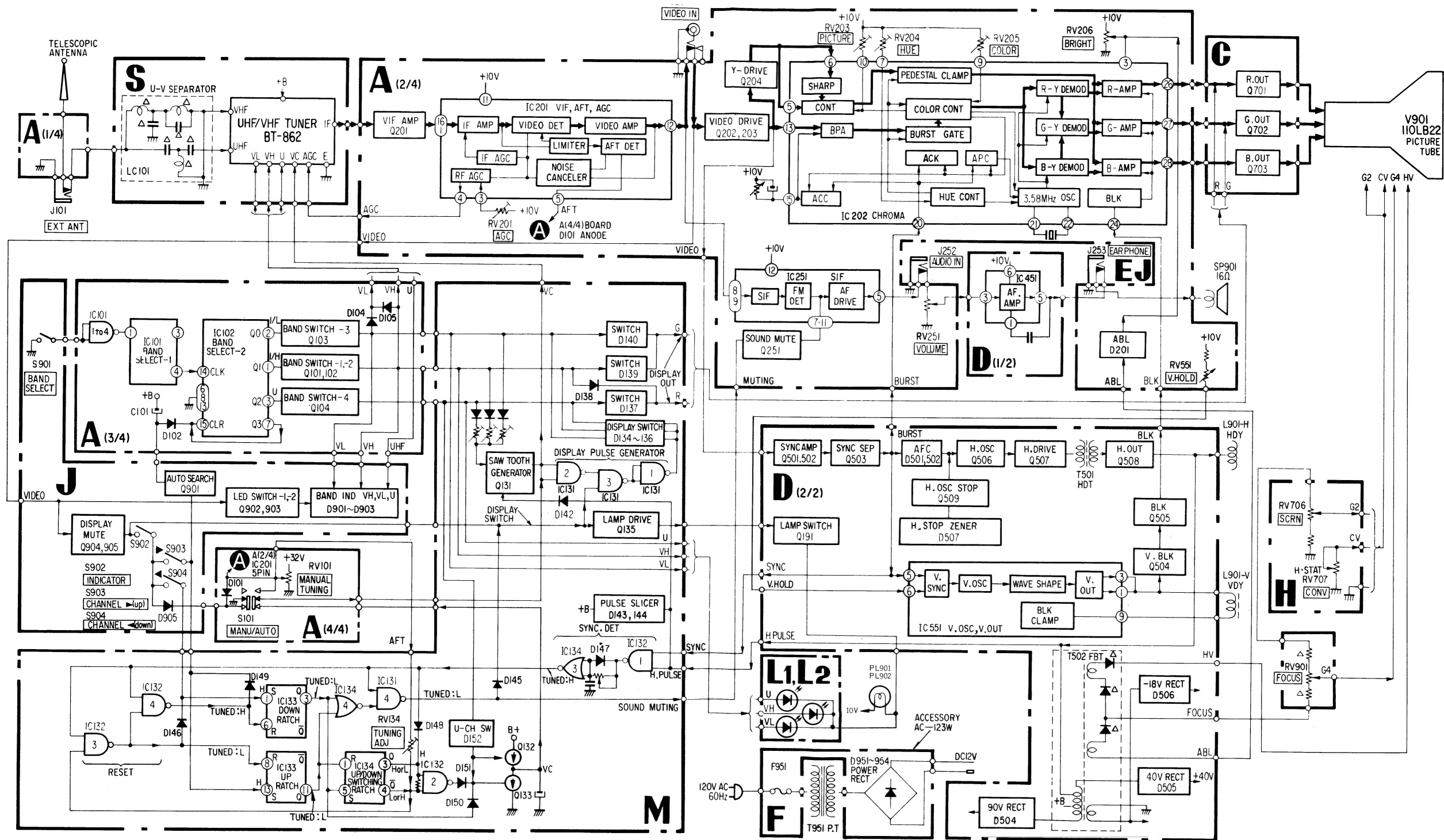


Fig. 4

1-2. BLOCK DIAGRAM



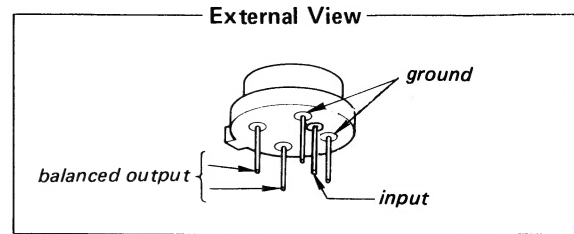
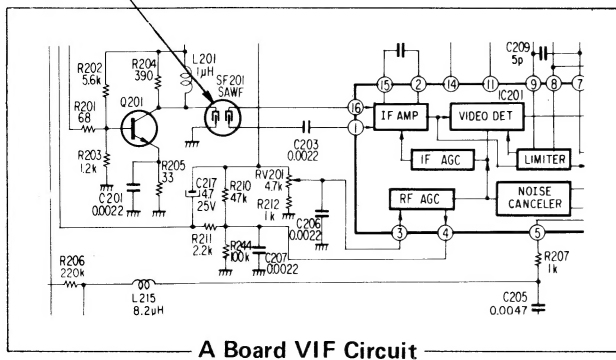
1-3. ELECTRICAL PARTS DISRIPTION

NEW DEVICE DESCRIPTION

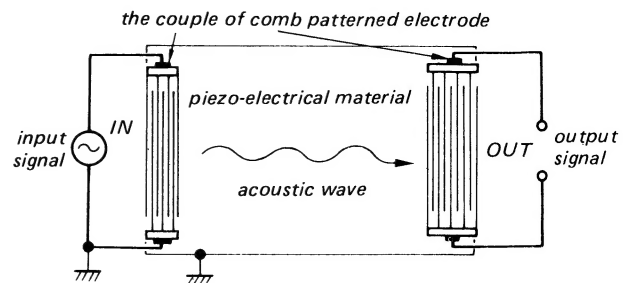
SAWF: Surface Acoustic-Wave Filter

SAWF (SF201) is used for VIF filter in this set instead of L/C filters.

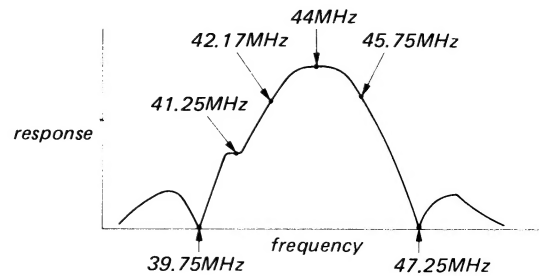
The SAWF consists of two couple of comb patterned electrodes. One is at input side, other at output side. The electrical input signal is changed to the acoustic signal at the input electrodes. The changed acoustic signal is transmitted on the surface of piezo-electrical material. Then the acoustic signal is changed to the electrical signal at the output electrodes.



— Internal Structure & Principle —

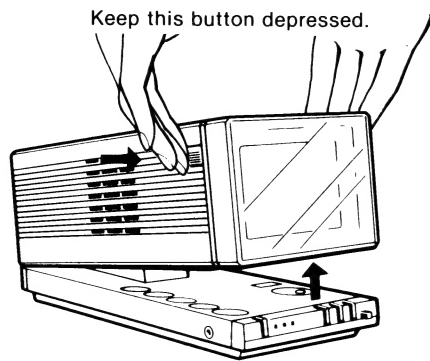


— Frequency-Response Diagram —



1-4. MECHANICAL DIScription

1-4-1. To expose the controls

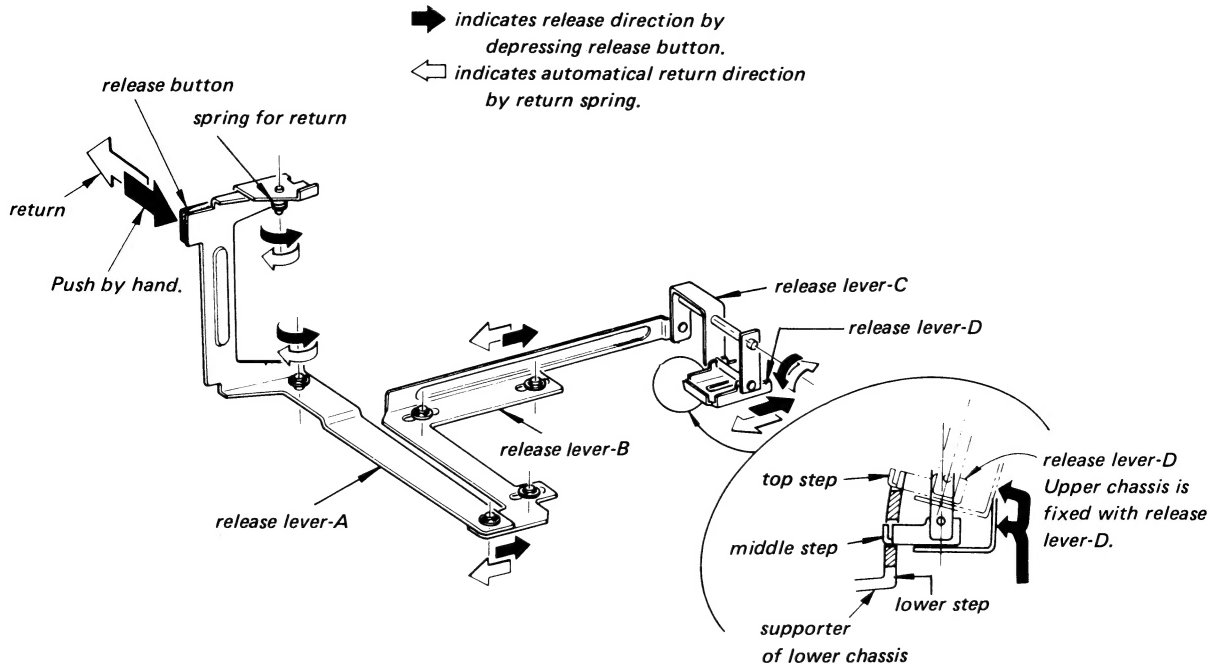


Raise the cabinet then release the button.
The cabinet will then be locked in the raised position.

- To lower the cabinet, depress the button and gently let the cabinet down.
- The cabinet can be locked in the two different raised positions.

CAUTION: Do not push down on the cabinet when it is in the raised position, since this may cause serious damage to the set.

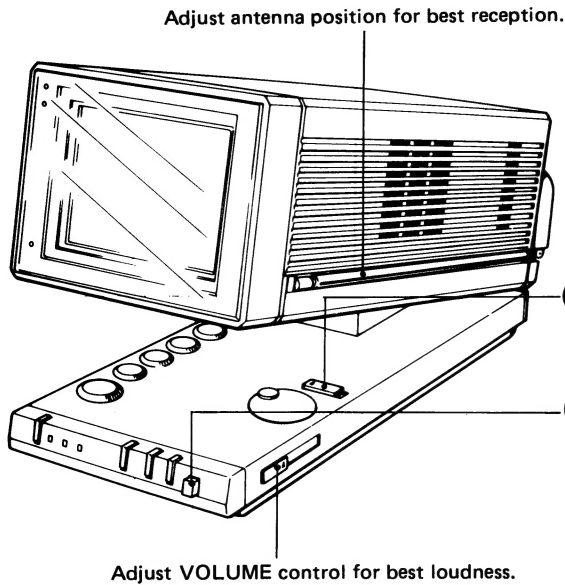
1-4-2. Action of elevation mechanism



1-5. OPERATION

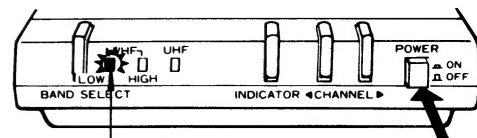
Operate the controls in the numbered sequence for proper operation.

To tune in a channel automatically

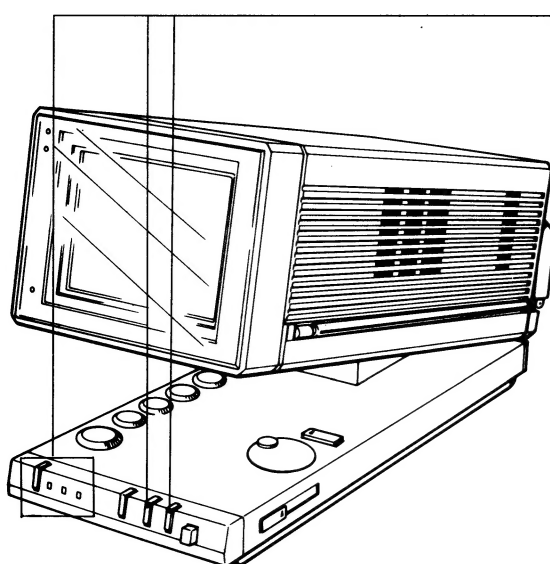


- When using external antenna, tuning may sometimes stop between channels in strong signal areas. In this case, set the DISTANT-LOCAL Switch on the antenna connector to LOCAL.

- 1 Set the MANUAL/AUTO Switch to AUTO.
- 2 Push the POWER Button in until locked.



The lowest numbered active channel in your area will automatically be received and the red VHF Band Indicator will light.



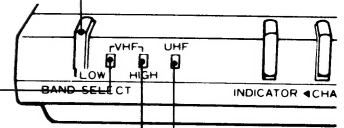
- 3 Select the desired channel:

- a Push this button to select one of the three TV bands. The BAND Indicator lamps show what band you are tuned to.

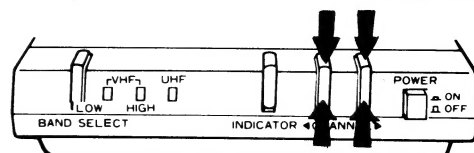
red lamp: VHF LOW on panel for VHF channels 2-6

yellow lamp: VHF HIGH on panel for VHF channels 7-13

green lamp: UHF on panel for UHF channels 14-83



- b Press the CHANNEL ► Button to locate a higher numbered channel or the CHANNEL ◀ Button to locate a lower numbered channel.



• While tuning, a colored channel marker appears on the screen and the corresponding TV band indicator on the left side of the screen will light.

The red colored channel marker indicates VHF channels 2 through 6.

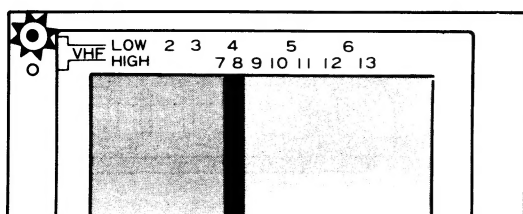
The yellow colored channel marker indicates VHF channels 7 through 13.

The green colored channel marker indicates UHF channels 14 through 83.

The sound is muted while searching for a TV station.

When you press the CHANNEL Buttons, the colored channel marker on the screen moves towards the right when a higher numbered channel is being tuned and towards the left when a lower numbered channel is being tuned.

For example this indicates that VHF channel 4 is being received.



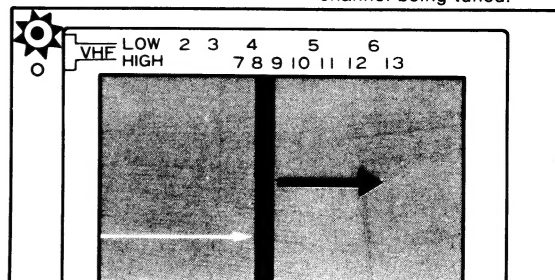
A few seconds after the channel is tuned correctly, the band indicator will turn off and the channel marker will disappear. To display the channel marker again, press the INDICATOR Button.

Examples

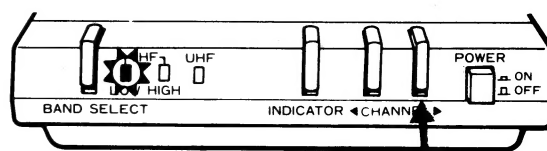
When a VHF LOW channel (2-6) is tuned:

the red lamp lights

these numbers indicate the channel being tuned.



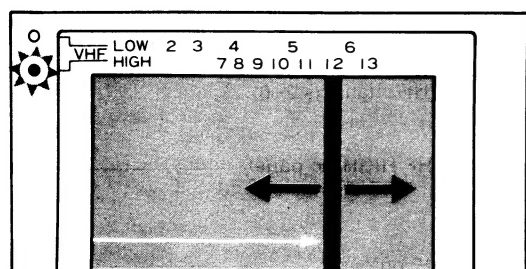
the red Channel Marker moves



for a higher channel

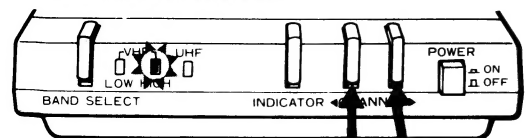
When a VHF HIGH channel (7-13) is tuned:

the yellow lamp lights



the yellow Channel Marker moves

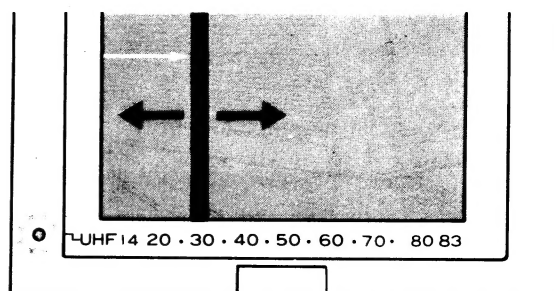
- Push the BAND SELECT Button to select the VHF HIGH band



for a lower channel
for a higher channel

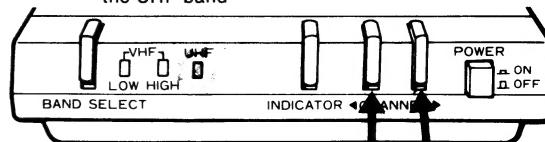
When a UHF channel (14-83) is tuned:

the green Channel Marker moves



the green lamp lights

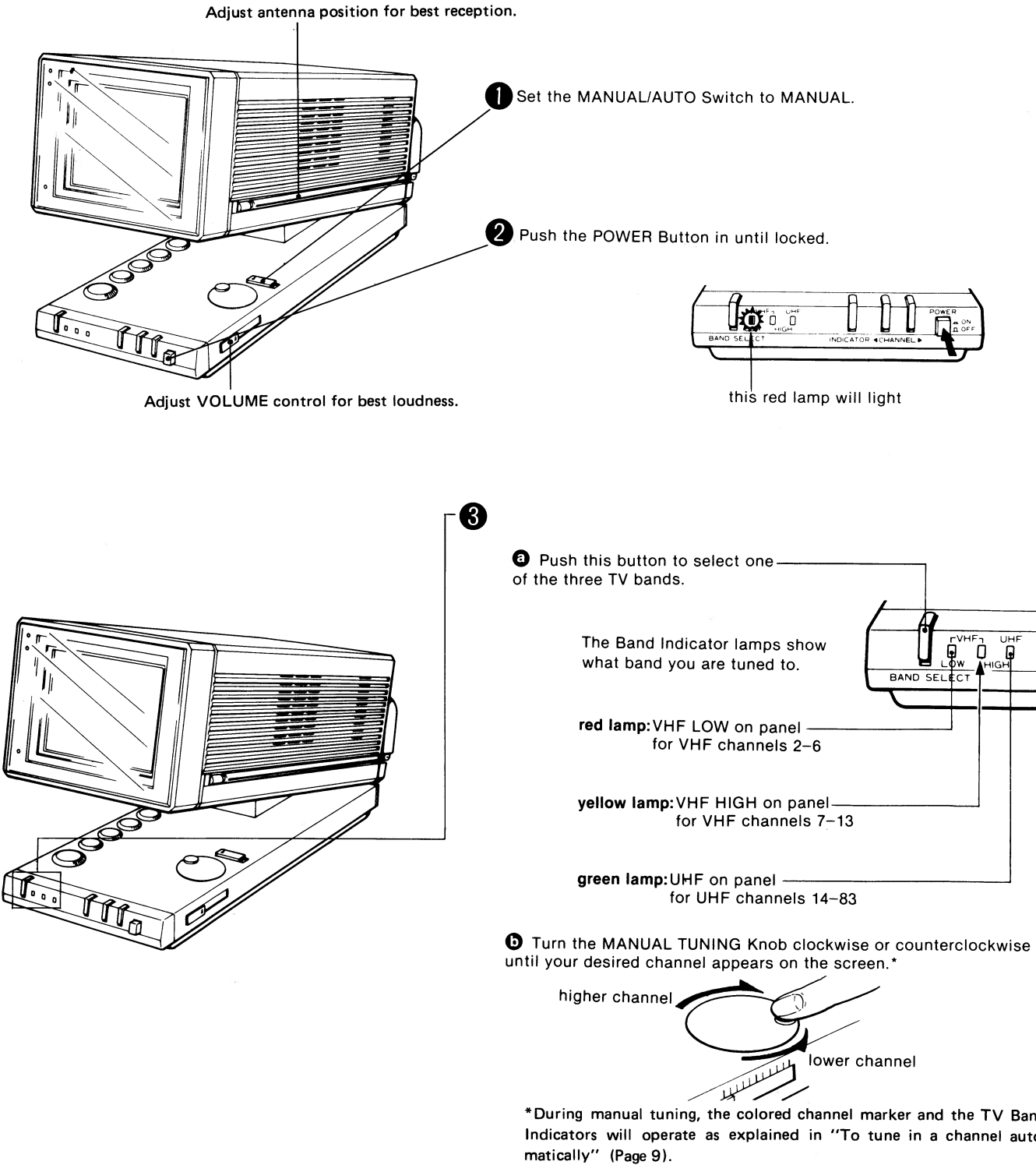
- Push the BAND SELECT Button to select the UHF band



for a lower channel
for a higher channel

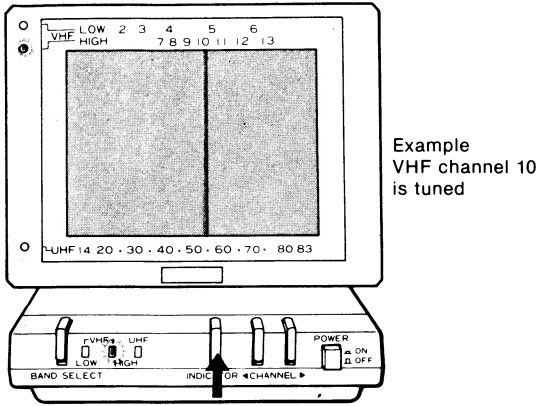
To tune in a channel manually

When there is extreme interference, or to tune to an extremely weak channel, manual tuning is recommended.



To display the channel marker on the screen

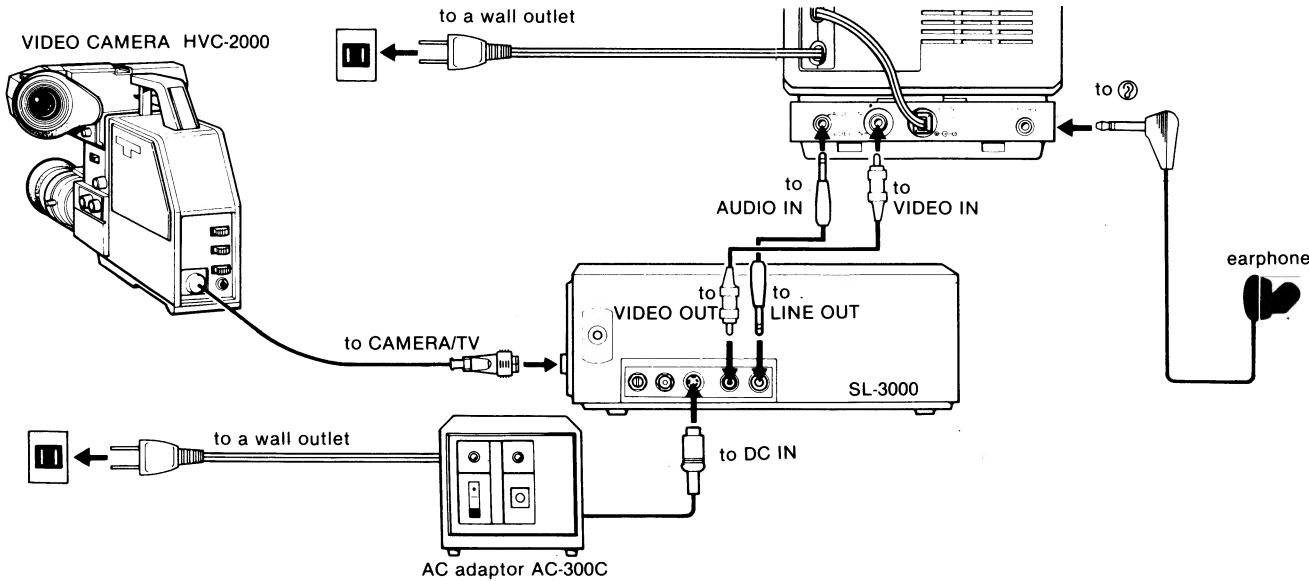
To identify the number of the channel tuned in, press the INDICATOR Button. While the INDICATOR Button is pressed the band indicator will light and the colored channel marker will appear on the screen.



To use with other video and audio equipment

Connect a color video camera (for example the Sony HVC-2000) and a video tape recorder (for example the Sony SL-3000) as illustrated.

• The picture and the sound being recorded with the camera and the recorder may be monitored so that accurate camera and recorder adjustments may be made.

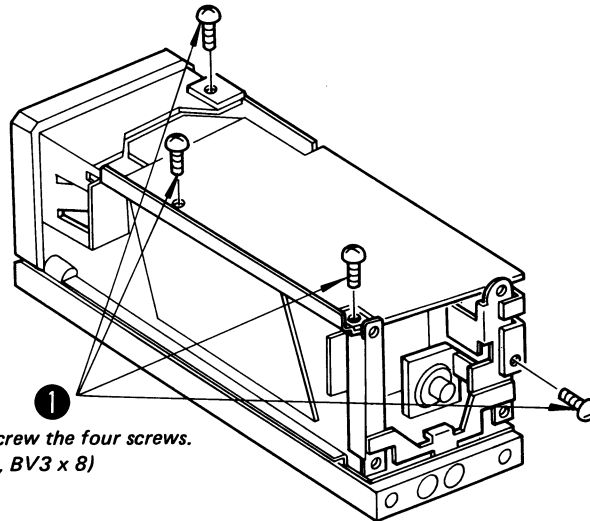


SECTION 2

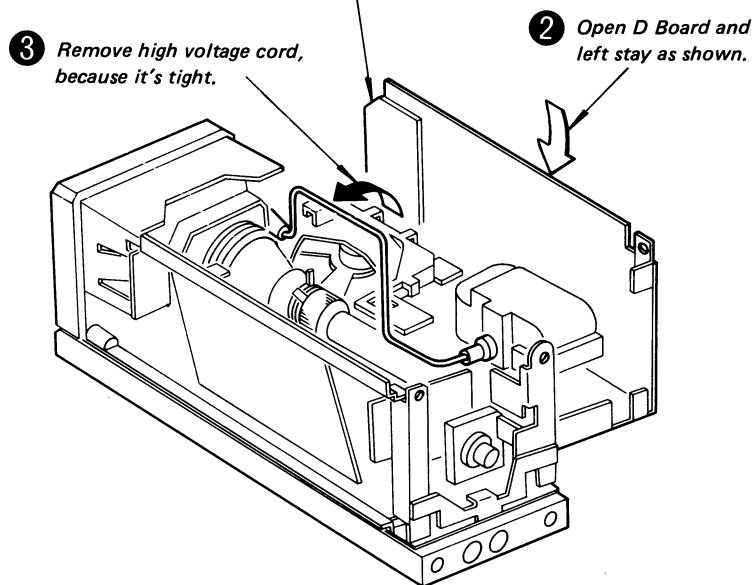
DISASSEMBLY & REPLACEMENT

2-1. REMOVAL FOR CHECKING AROUND PICTURE TUBE NECK AND FOR SETUP ADJUSTMENT.

See page 15 for the removal of rear cover and upper cabinet.

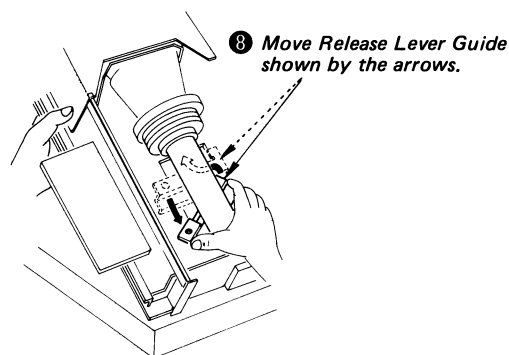
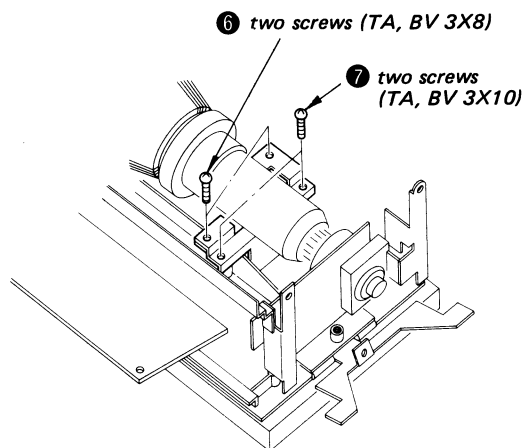
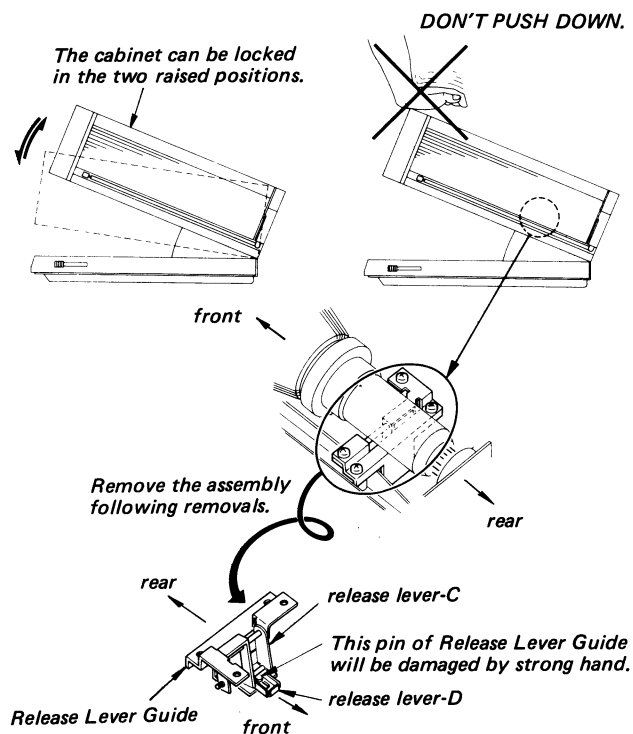


Keep this heat sink (B+ line)
away from chassis (ground)
for preventing short circuit.



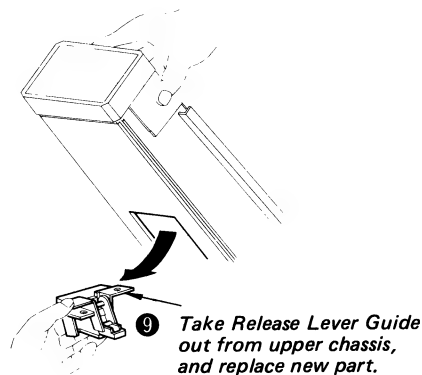
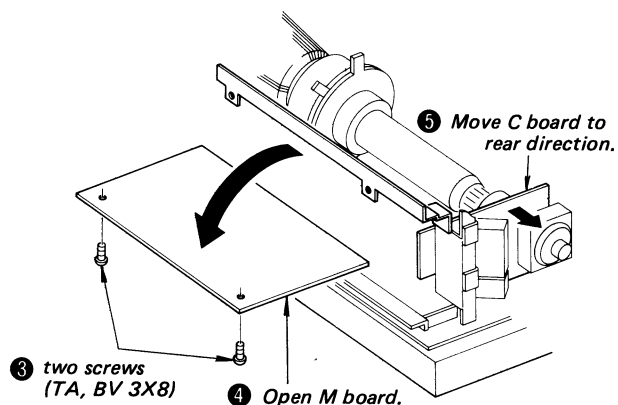
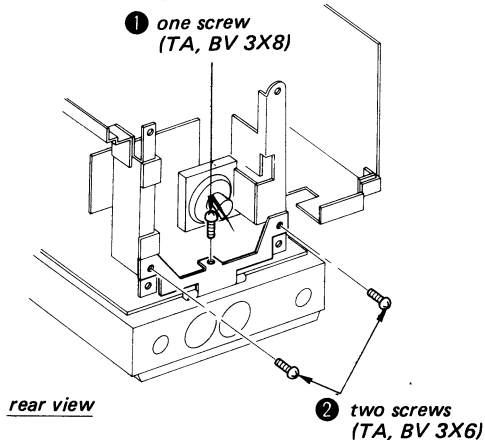
2-2. REMOVAL & REPLACEMENT FOR RELEASE LEVER GUIDE

When KV-4000 is in the raised position, upper cabinet is supported by Release Lever Guide and release lever D.
If the upper cabinet is pushed down by strong hand, the pin of Release Lever Guide will be damaged.

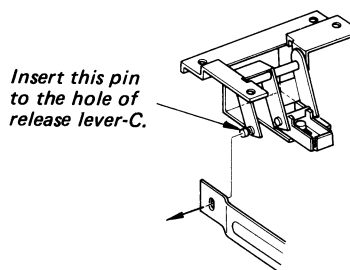


RELEASE LEVER GUIDE REMOVAL

- Follow the disassembly in the numerical order given.



Replacement Precaution



KV-4000

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SECTION 3

SETUP ADJUSTMENTS

Precautions:

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with rated power supply voltage unless otherwise noted.

Perform the adjustments in order as follows:

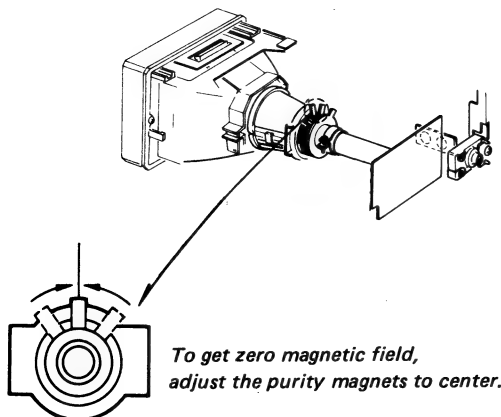
1. Beam Landing
2. Convergence
3. White Balance

Note: Test Equipment Required.

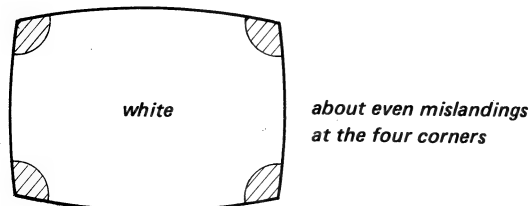
1. Color-bar/Pattern Generator
2. Degausser

3-1. BEAM LANDING

1. Feed in a white pattern signal from color-bar/pattern generator.
2. Turn PICTURE and BRIGHT controls fully clockwise.
3. Demagnetize the screen with a demagnetizer.
4. Adjust the purity magnets as shown below.



5. Loosen the deflection yoke screw and slide the deflection yoke to backward.
6. Adjust the purity magnet for center landing as shown below. At the four corners, mislandings are observed.



7. Slide the deflection yoke to forward slowly, and get a position that there is no mislanding.
8. Tighten the deflection yoke screw after completing steps 5 through 7.
Check that there is no mislanding by facing the set towards every directions.
9. Apply a suitable locking compound to the purity magnets after completing landing adjustments.

3-2. CONVERGENCE

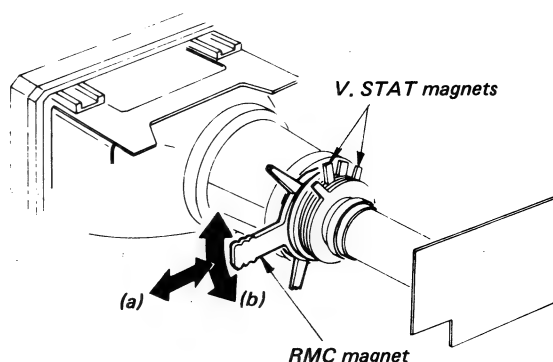
Preparation:

1. Feed in a dot pattern signal from color-bar/pattern generator.
2. Set PICTURE and BRIGHT controls for suitable picture.
3. Adjust beam landing, white balance and focus in about average condition.

1. Static Convergence

Horizontal Static Convergence

1. Adjust CONV control (H board) so that blue dot coincide with green dot at the center of screen.
2. When red dots are shifted in the same direction through out the whole screen, perform HMC compensation.
 - (a) Slide RMC magnet in horizontal to correct insufficient H. static convergence.



Vertical Static Convergence

1. Adjust V. STAT magnets so that blue dot coincide with green dot at the center of screen.
2. When red dots are shifted in the same direction through out the whole screen, perform VMC compensation.
 - (b) Rotate RMC magnet around the neck of tube to correct insufficient V. static convergence.

After completing static convergence, apply a suitable locking compound to V. STAT magnets.

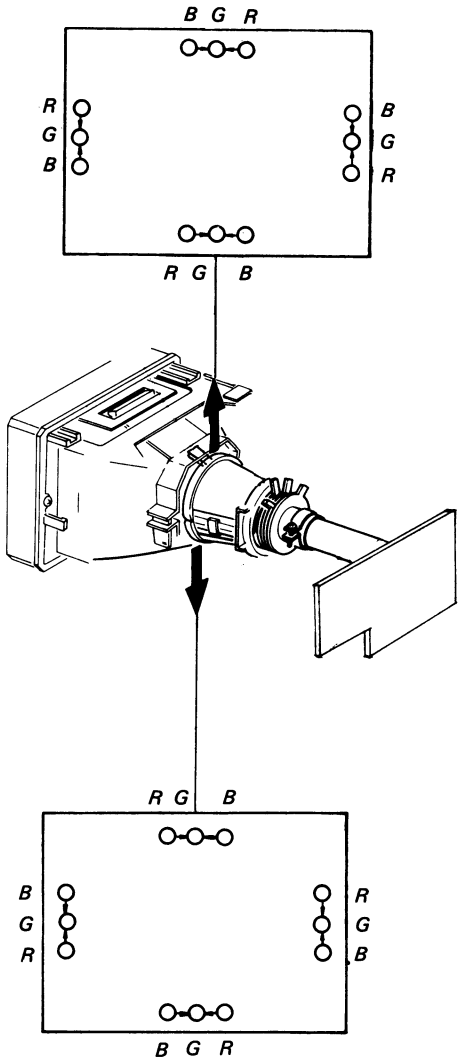
Note:

- HMC and VMC compensation influence each other, so repeat them.
- When compensations become impossible because of reverse movements of HMC and VMC, perform compensations by installing upside-down the RMC magnet.

SECTION 4
CIRCUIT ADJUSTMENTS

2. Dynamic Convergence Adjustment

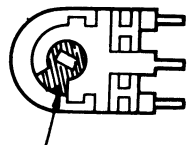
- When the mislanding is observed at screen as shown below, move the deflection yoke up or down.
After adjustment,
fix the deflection yoke by spacers.



3-3. WHITE BALANCE

White Balance Near Cut-off

- Feed in a luminance signal of color-bar signal from color-bar/pattern generator, or select MANUAL/AUTO switch to MANUAL and tune in a monochrome picture by tuning with MANUAL TUNING knob.
- Turn PICTURE and BRIGHT controls fully counterclockwise.
- Set G.DRIVE and B.DRIVE controls for mechanical center.
- Set R.BKG, G.BKG and B.BKG controls as shown below.



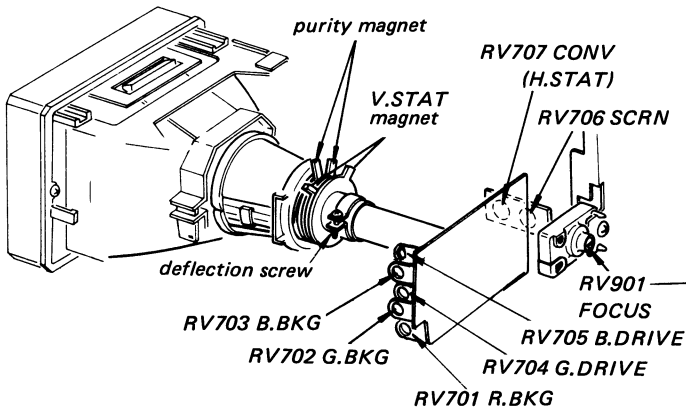
Set slider at this position.

- Turn SCR control slowly to obtain a faintly visible picture.
Note the color which first becomes visible by turning SCR control.
Don't turn a BKG control of this color.
- Adjust the other two BKG controls for best white balance (neutral gray).

White Balance at White Peak

- Turn PICTURE and BRIGHT controls fully clockwise.
- Adjust G.DRIVE and B.DRIVE controls for best white balance.

Note: When white balance can not be obtained near cut-off or at the white peak, repeat above steps several times.



Note: (1) TEST EQUIPMENT REQUIRED

- Oscilloscope
- Voltmeter (VOM)
- Color-bar/pattern generator
- Variable auto-transformer
- Isolation transformer

(2) INPUT SIGNAL

When making these adjustments, supply a cross-hatch, a color-bar or an off-air signal.

(3) CONTROL SETTINGS

Controls and switch should be set as follows when making checks and adjustments unless otherwise noted.

- PICTURE control } Set for best picture.
BRIGHT control }
COLOR control }
V. HOLD } Set for stable picture.

(4) These adjustments should be performed with rated power supply voltage, unless otherwise noted.

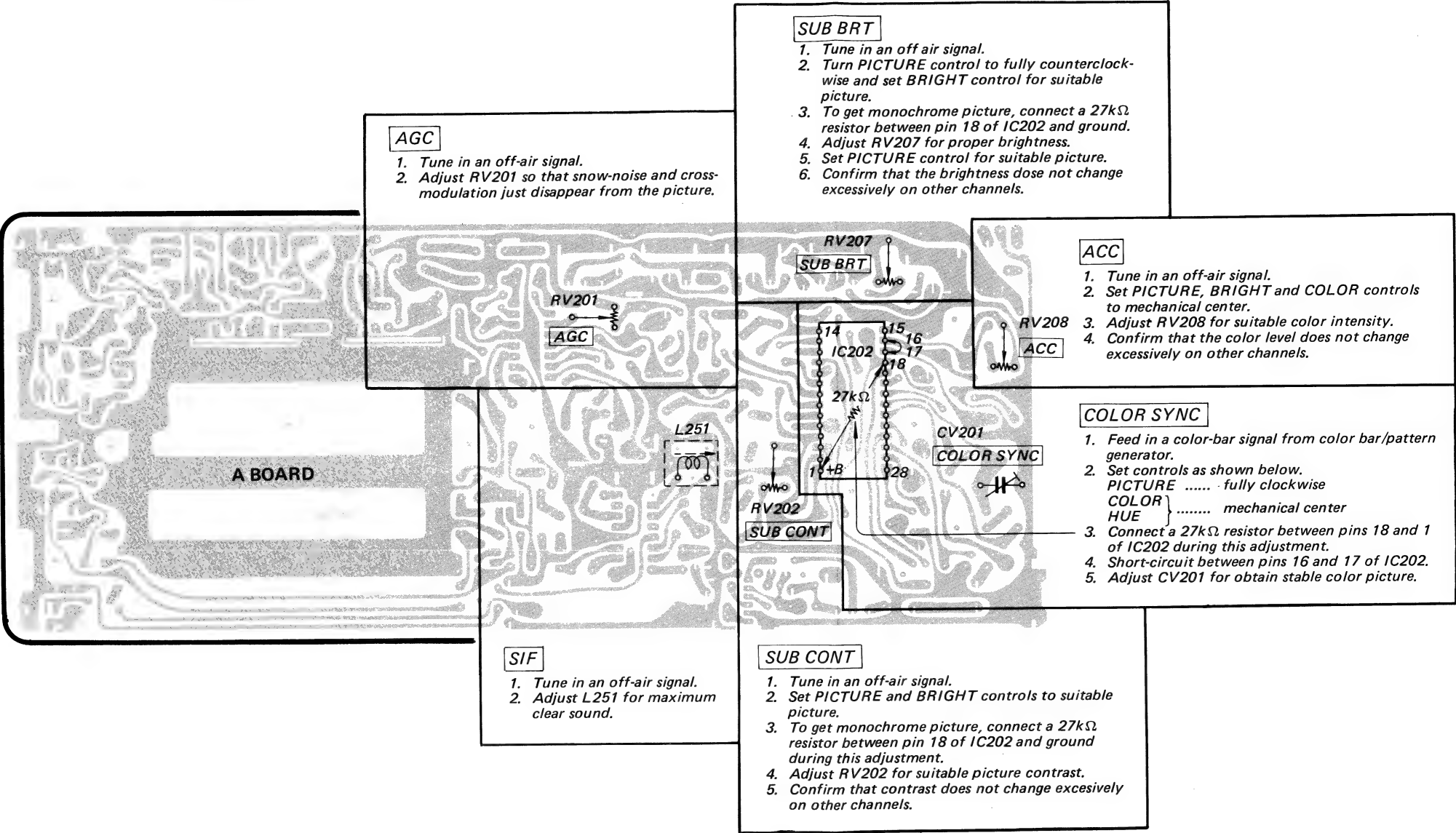
4-1. FOCUS ADJUSTMENT

- Feed in an off-air signal.
- Set PICTURE and BRIGHT controls for suitable picture.
- Adjust V.HOLD control to synchronize picture.
- Adjust FOCUS control (H board) for best focus.

(5) CIRCUIT ADJUSTMENTS

Adjustment	Circuit Board	Page
FOCUS		20
AGC	A	21,22
SUB BRT		
ACC		
COLOR SYNC		
SUB CONT		
SIF	D	23,24
B+ 10V ADJ		
V. CENT		
H. CENT		
H. SIZE		
H. FREQUENCY		
R545 ADJ		
R603 ADJ		
SYNC ADJ	M	25,26
TUNE ADJ		
POSITION ADJ L-CH		
POSITION ADJ H-CH		
POSITION ADJ UHF, POSITION RANGE ADJ		
VC ADJ(Canadian)		

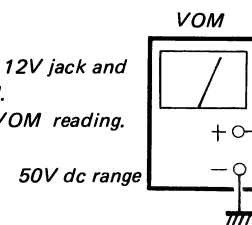
4-2. A BOARD ADJUSTMENTS




4-3. D BOARD ADJUSTMENTS

B+ 10V ADJ

1. Supply 13.5V dc to DC IN 12V jack and push POWER switch to ON.
2. Adjust RV601 for 10V VOM reading.

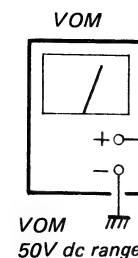


R603 ADJ

When replacing the following components, make this adjustment. D601, Q601, Q602, R603, R604, RV601 and TH601 (marked  on the schematic diagram).

1. Connect the regulated-dc power supply to DC IN 12V jack and supply 15V dc.
2. Push POWER switch to ON.
3. Turn RV601 for maximum reading on VOM.
4. Select the resistance value of R603 (1%W carbon) to 11.8V dc on VOM.

After completing this adjustment, perform B+ 10V ADJ.



V.CENT

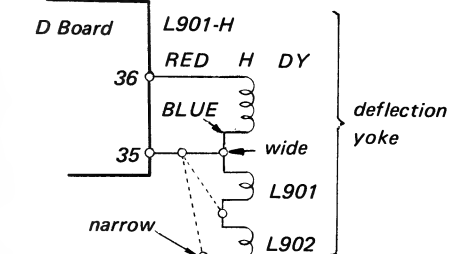
- To shift raster upward Apply solder at A.
- To shift raster downward Apply solder at B.

H.CENT

- To shift raster leftward Apply solder at A.
- To shift raster rightward Apply solder at B.

H.SIZE

1. Tune in an off-air signal.
2. Set PICTURE and BRIGHT controls for best picture.
3. Change the connection of H. DY for suitable horizontal raster size as shown below.

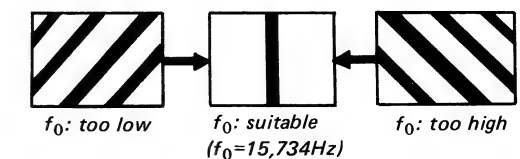


4. Select C531 for suitable horizontal raster size or disconnect C531 for suitable horizontal raster size. *C531: 200V mylar

H. SIZE	Part No.
narrow	0.0022 : 1-108-684-00
	0.0033 : 1-108-686-00
	0.0047 : 1-108-688-00
	0.0056 : 1-108-689-00
	0.0068 : 1-108-690-00
wide	0.0082 : 1-108-691-00


H.FREQUENCY

1. Tune in an off-air signal.
2. Adjust PICTURE, BRIGHT and V.HOLD controls for suitable and stable picture.
3. Connect capacitor between the collector of Q503 and ground during this adjustment.
4. Adjust L502 for stable picture as shown.



5. Confirm that stable picture is obtained on other channels.

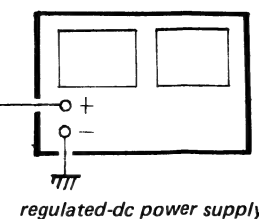
R545 ADJ

When replacing the following components, make this adjustment. D507, Q509, R544, R545 and R546 (marked  on the schematic diagram).

Note:

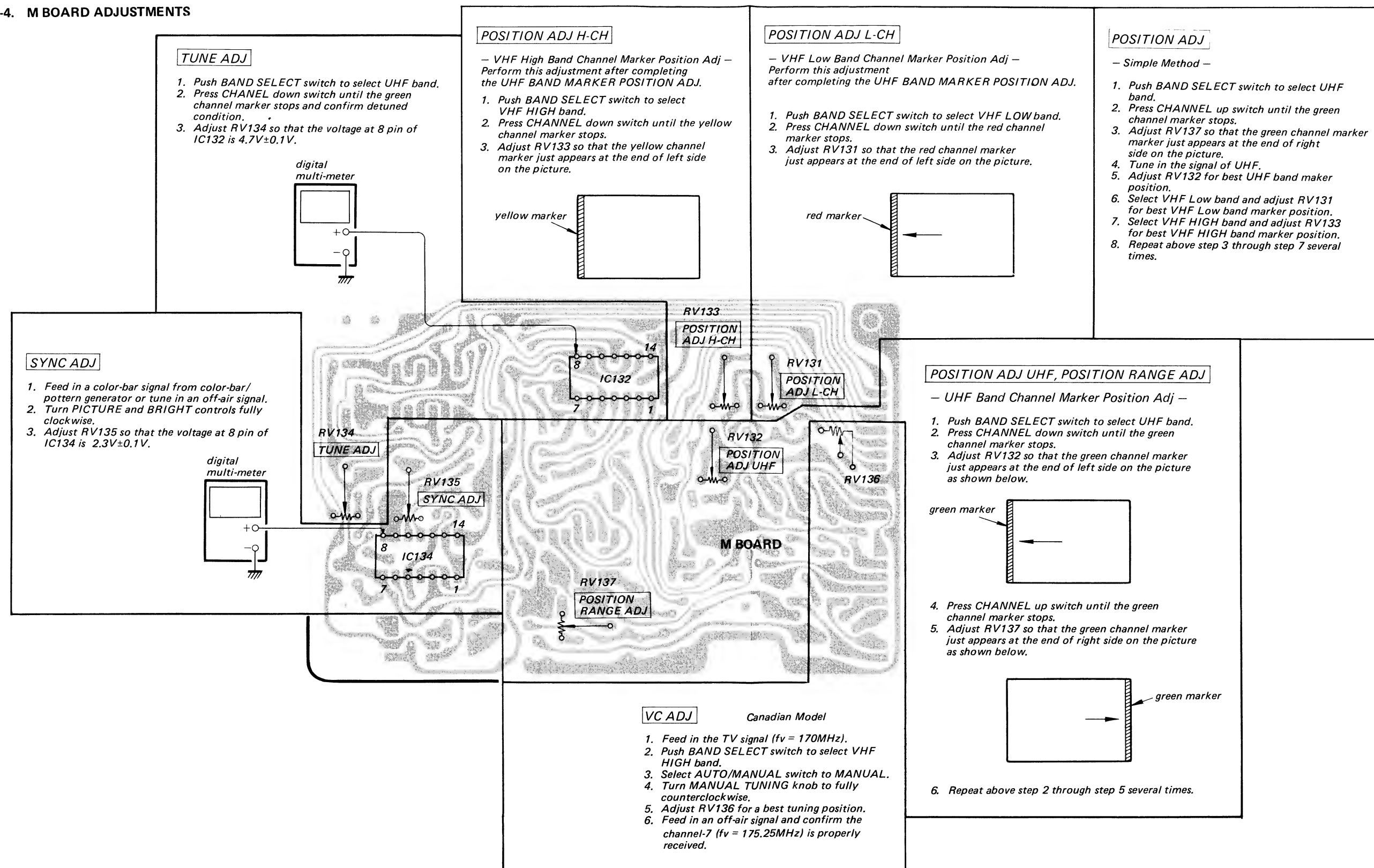
Before starting this adjustment, confirm that the stable picture is obtained.

1. Connect the regulated-dc power supply as shown and supply 12.3V.
2. Select resistance value of R545 (1%W carbon) so that the picture is not synchronize as below.



3. Disconnect the regulated-dc power supply.
4. Confirm that the stable picture is obtained in normal operation.

4-4. M BOARD ADJUSTMENTS

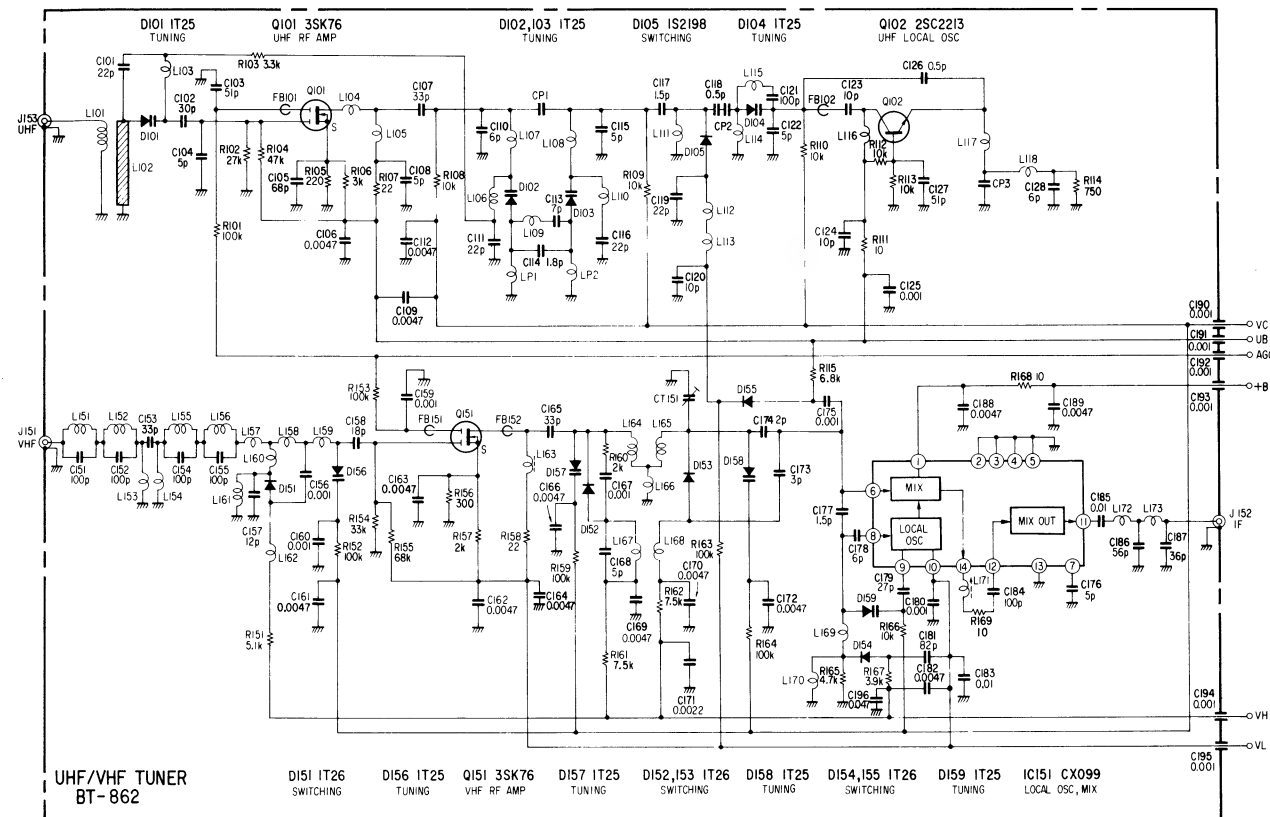


SECTION 5

DIAGRAMS

5-1. TUNER SCHEMATIC DIAGRAM

– UHF/VHF TUNER –
(BT-862)



- Tuner reference numbers are not included in the Electrical Parts List.

C

[R.G.B OUT]

H

[SCRN, CONV (H.STAT)]
[VOLUME]

J

[BAND SELECT, BAND INDICATING LED,
CHANNEL UP/DOWN]

5-2. MOUNTING DIAGRAMS

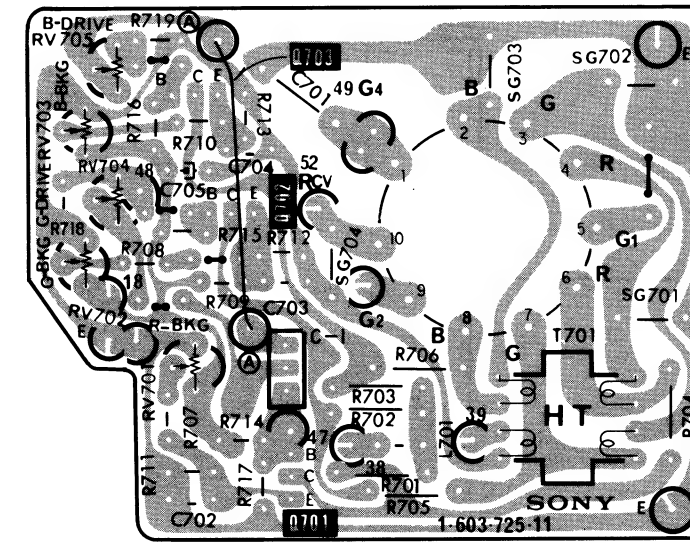
– Conductor Side –

A

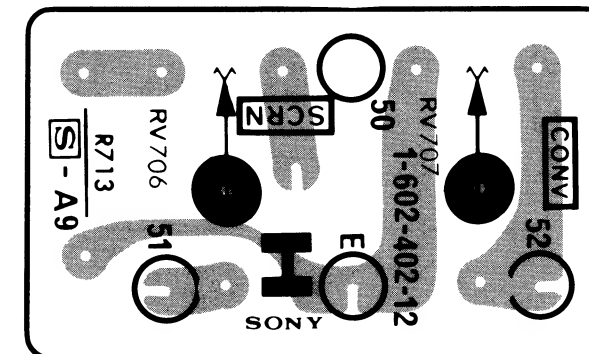
B

C

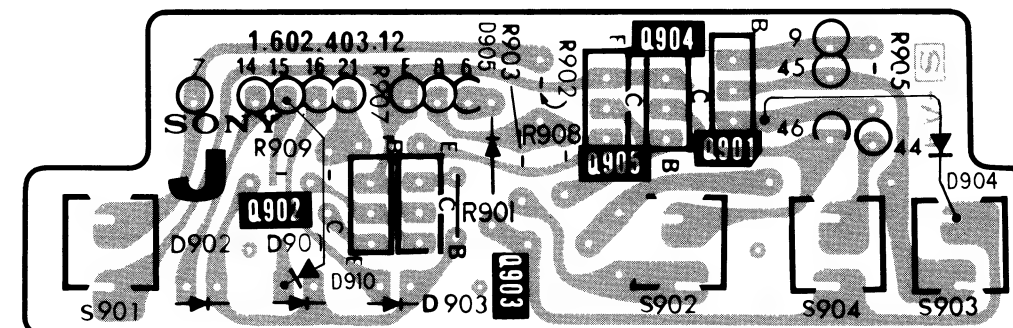
— C Board —



— H Board —



— J Board —



VIF, SIF, CHROMA,
Y.AMP, CUSTOMER CONTROL,
BAND SELECT

A

A

S

L1

L2

[TUNER]

[LED]

A

B

C

D

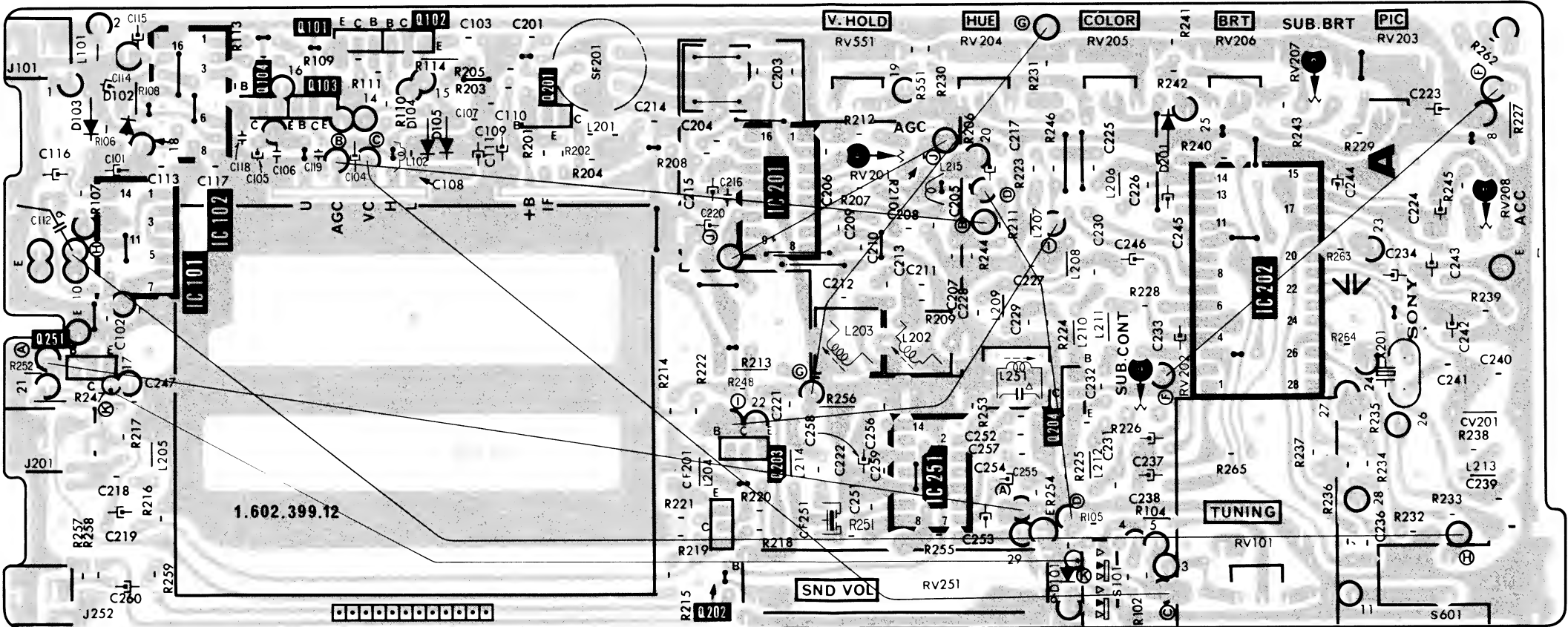
E

F

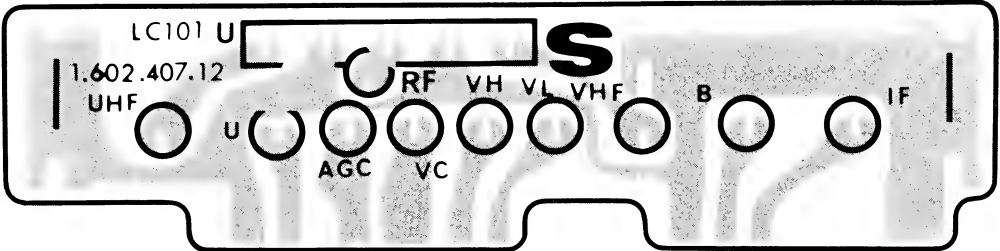
G

— A Board —

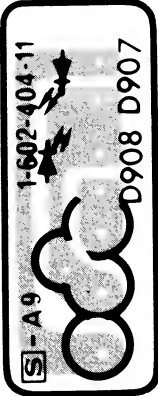
Q	IC102													Q	
IC	251	IC101	104	103	101	102	201	IC201	202	203	IC251	204	IC202	IC	
D	103	102				104	105					101	201	D	
ADJ								RV201	RV202				RV207	RV208 CV201	ADJ



— S Board —



— L1 Board —



— L2 Board —



[SYNC SEP, H.DEF, V.DEF,
AF.OUT,HV BLK, POWER SUPPLY]

D

D

[CONNECTOR]

X1

X2

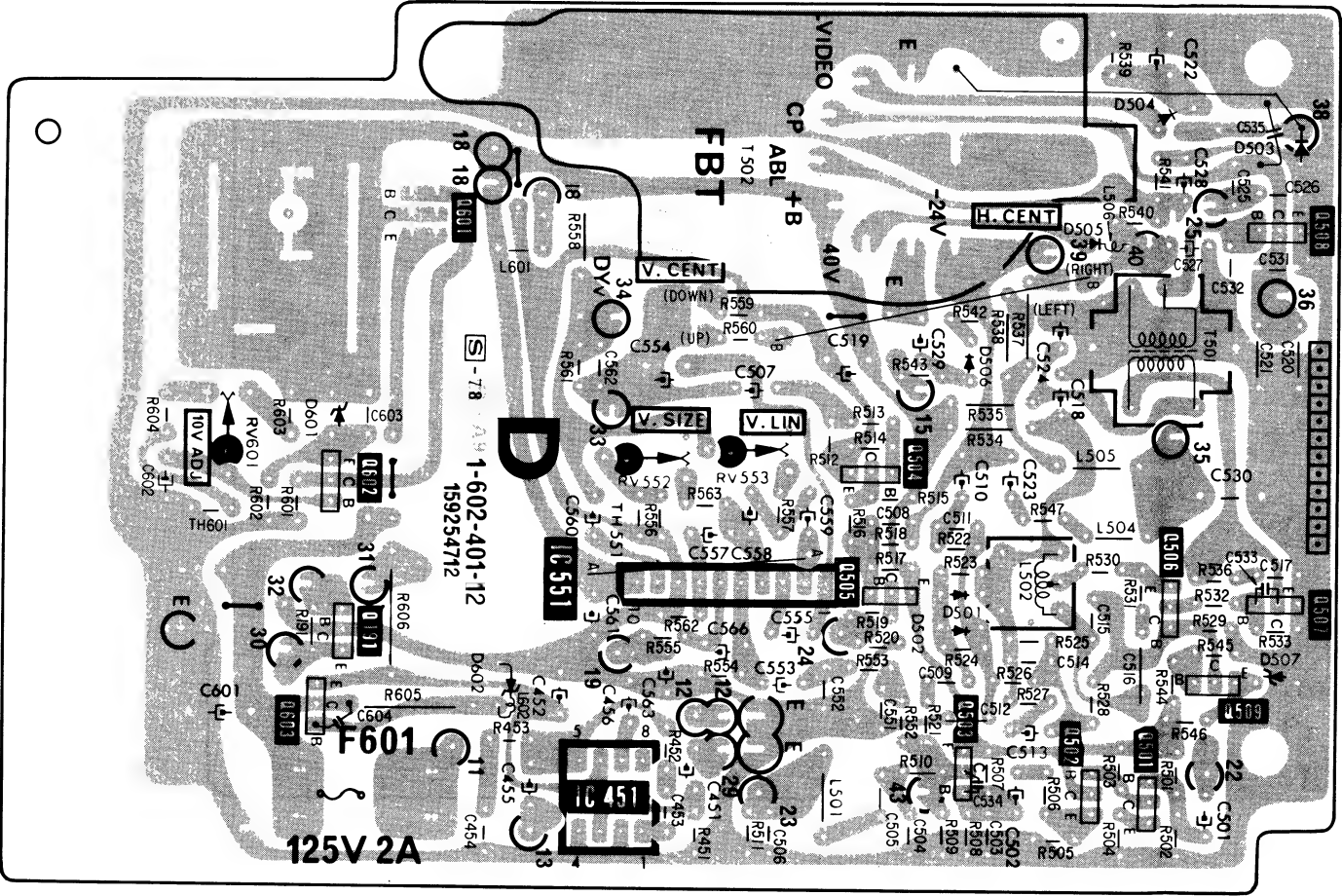
M

[TUNING DISPLAY,
VC VOLTAGE CONTROL]

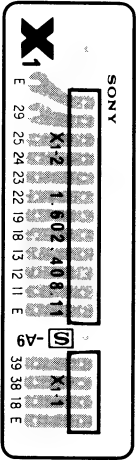
A B C D E F G

— D Board —

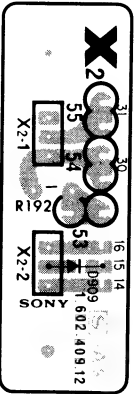
IC,Q	603	602	601	IC451	IC551	504	503	502	506	509	508	IC,Q
D	601	602				505	506	501	505	504	503	D
ADJ	RV601			RV552	RV553		502				507	ADJ



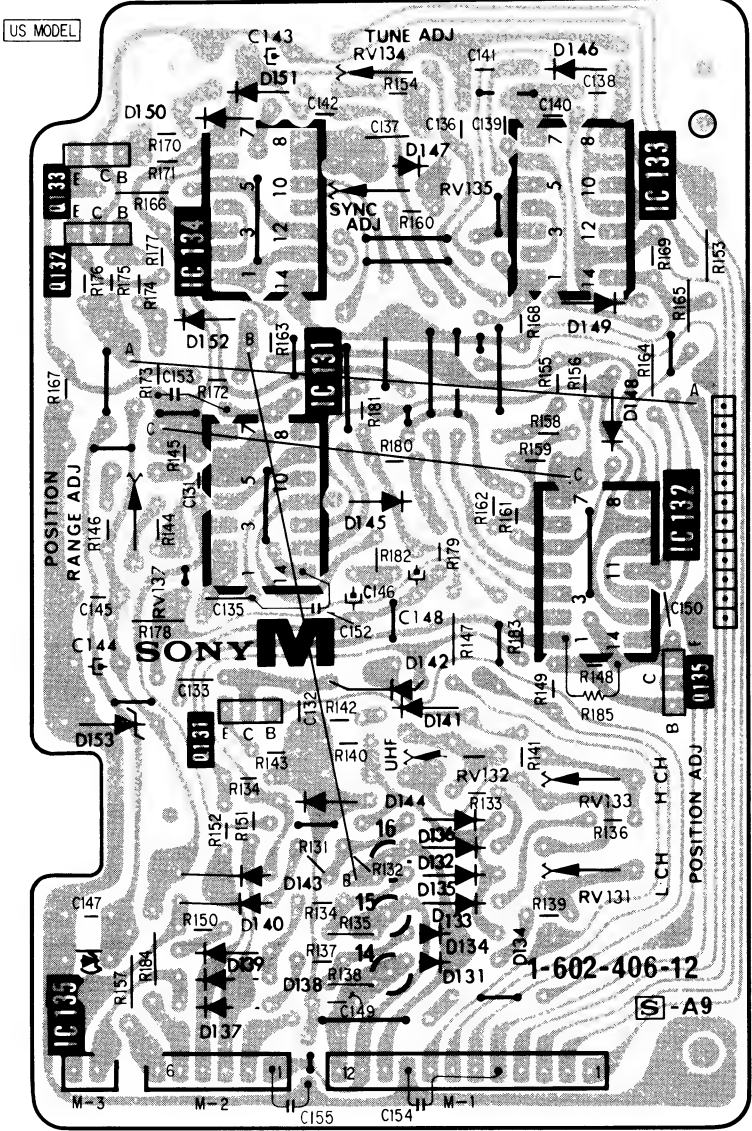
— X1 Board —



— X2 Board —

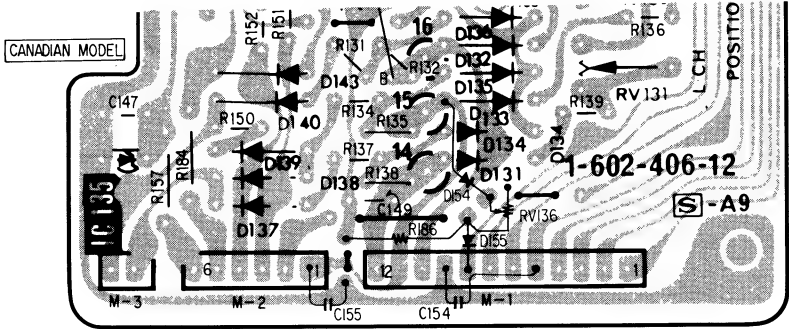


— M Board — US MODEL




Q, IC	D	ADJ
IC133	146	RV134
IC134	147	RV135
IC132	149	
IC131	148	RV137
IC132	145	
IC135	142	
IC135	153	RV132
IC135	144	RV133
IC135	136	
IC135	132	
IC135	143	RV131
IC135	133	
IC135	140	
IC135	134	
IC135	139	
IC135	131	
IC135	137	


CANADIAN MODEL










Q, IC	D	ADJ
IC135	136	
IC135	132	
IC135	143	RV131
IC135	140	
IC135	133	
IC135	134	
IC135	139	
IC135	131	
IC135	137	RV136
IC135	154	
IC135	155	


5-3. SCHEMATIC DIAGRAM

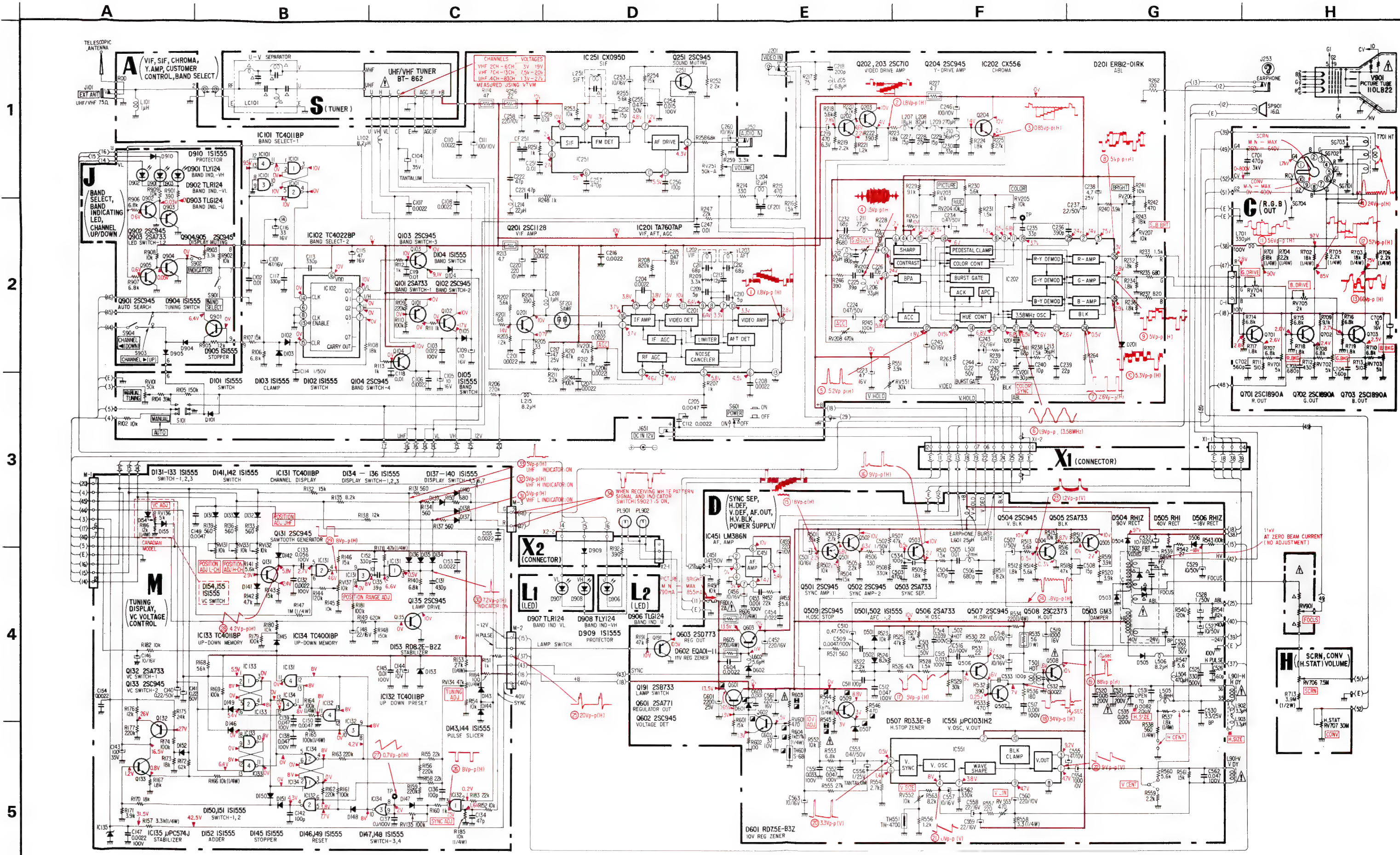
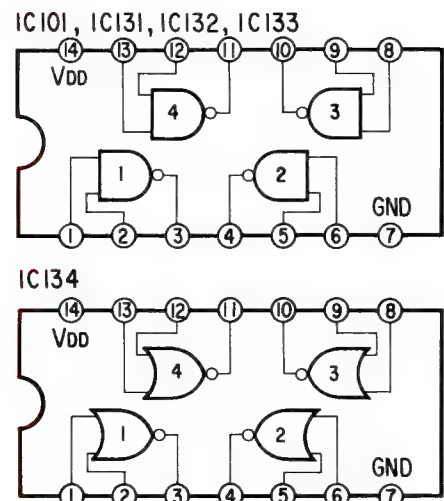
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par un trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- All capacitors are in μF unless otherwise noted. pF : μF 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, $\frac{1}{8}\text{W}$ unless otherwise noted. k Ω : 1000 Ω ; M Ω : 1000 k Ω .
-  : nonflammable resistor.
- \triangle : internal component.
-  : panel designation.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.
- When replacing components identified by , make the necessary adjustment indicated. If results do not meet the specified value, change the component identified by  and repeat the adjustment until the specified value is achieved. (Refer to R545 or R603 adjustment on page 23)
- When replacing the part in below table, be sure to perform the related adjustment.

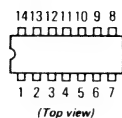
Replaced Part ()	Adjustment ()
D507, Q509, R544, R545 R546	R545
Q601, Q602, D601 TH601, R603, R604, RV601	R603

- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken with a 20,000-ohm-per-volt VOM.
-  : adjustment for repair.
- Readings are taken with a color-bar signal input.
- Voltage variations may be noted due to normal production tolerances.
- Voltages on M board are taken with set selected to channel 5 (VHF) position.

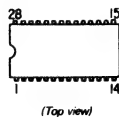


5-4. SEMICONDUCTORS

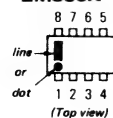
CX095D
TC4001BP
TC4011BP
 μ PD4001C



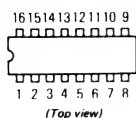
CX556



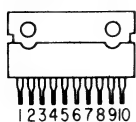
LM386N



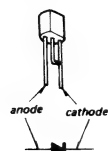
TA7607AP
TC4022BP



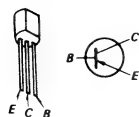
μ PC1031H2



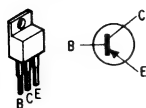
μ PC574J



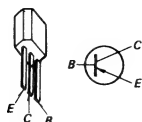
2SA733



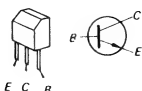
2SA771



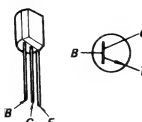
2SA1015



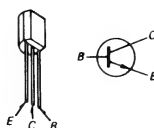
2SB733



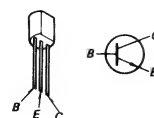
2SC710



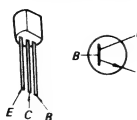
2SC945
2SC1364



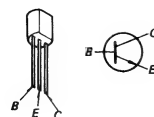
2SC1128



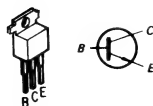
2SC1890A



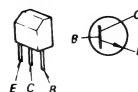
2SC2009



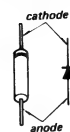
2SC2373



2SD773



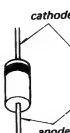
1S1555
RD3.3E-B
RD8.2E-B
RD8.2E-B2Z
RD7.5E-B
RD7.5E-B3Z
RD11E-B



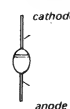
EQA01-11
EQB01-11Z



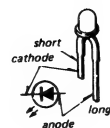
ERB12-01RK
ERB12-04RK
RH1A
RH1Z



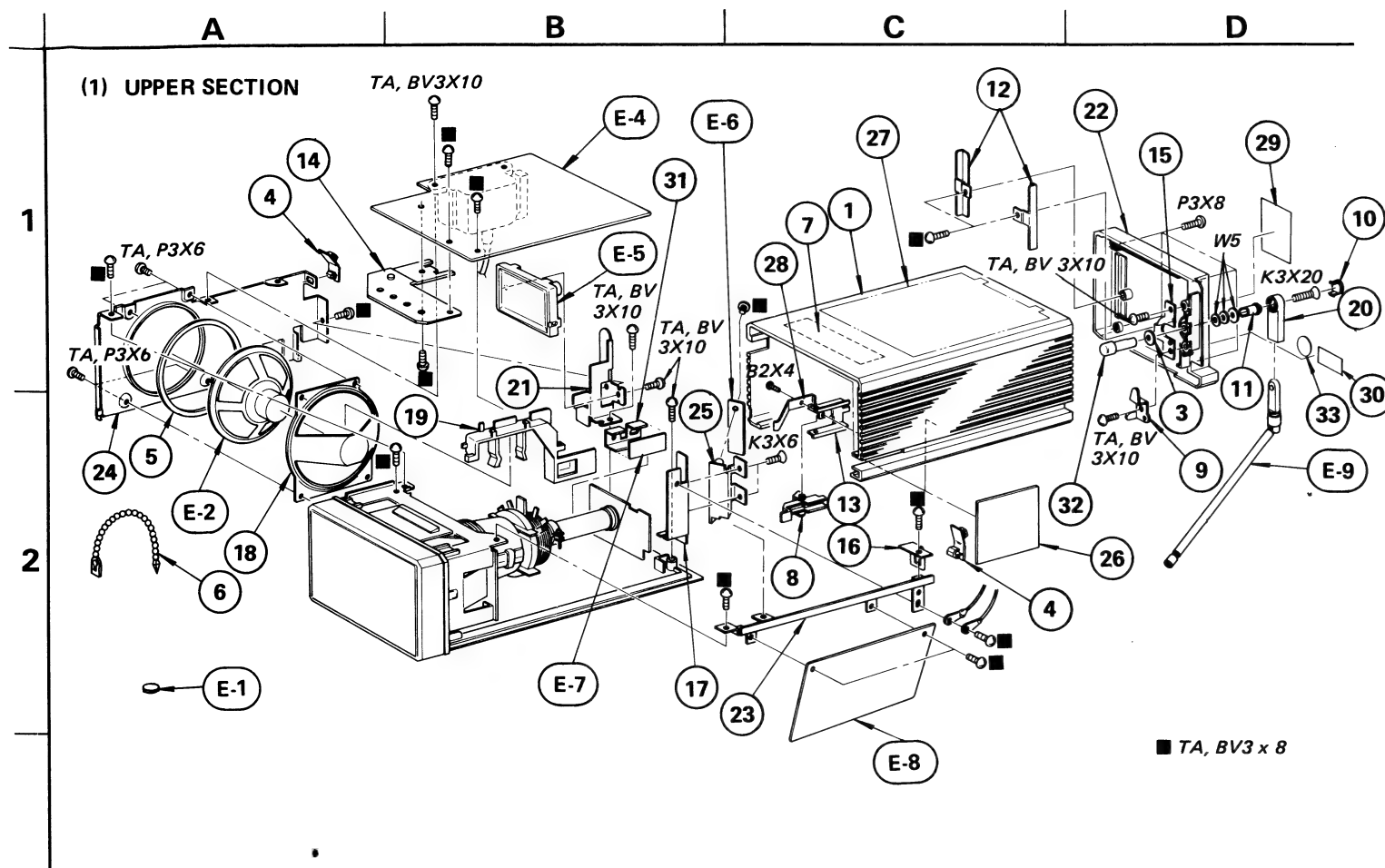
GM3
U05G
V06C
V09C



TLG124
TLR124
TLY124



**SECTION 6
EXPLODED VIEWS**



No.	Part No	Description	Remark	No.	Part No	Description	Remark
1	X-4344-203-0	CABINET ASSY		20	4-344-249-00	COVER, ANTENNA	
3	3-701-443-11	WASHER		21	4-344-250-00	BRACKET, STAY (LEFT)	
4	3-701-832-00	HINGE, CIRCUIT BOARD		22	4-344-253-00	COVER, REAR	
5	4-344-292-00	SPACER		23	4-344-259-00	STAY (RIGHT)	
6	4-308-870-00	CLIP, LEAD WIRE		24	4-344-261-00	STAY (LEFT)	
7	4-346-803-01	LABEL, PARTS LOCATION (US MODEL)		25	4-344-266-00	BRACKET, CONNECTOR	
8	4-344-201-03	BUTTON, ANTENNA		26	4-344-272-00	NET, BLIND	
9	4-344-214-00	PLATE, CONTACT, ANTENNA		27	4-344-273-00	SHEET, INSULATING	
10	4-344-216-00	COVER, SCREW		28	4-344-274-00	SPRING	
11	4-344-217-02	SHAFT, ANTENNA		29	4-346-801-01	LABEL, MODEL NUMBER (US MODEL)	
12	4-344-220-00	BRACKET, AC ADAPTER			4-346-802-01	LABEL, MODEL NUMBER (CANADIAN MODEL)	
13	4-344-223-00	BRACKET, ANTENNA BUTTON		30	4-017-439-00	LABEL, X-RAY (US MODEL)	
14	4-344-227-00	HEAT SINK, REG			3-701-829-02	LABEL, X-RAY (CANADIAN MODEL)	
15	4-344-234-00	PLATE, TERMINAL, ANTENNA		31	4-344-279-00	COVER, CONTROL	
16	4-344-236-00	BRACKET, PC BOARD		32	4-344-281-00	SHAFT, CONTACT, ANTENNA	
17	4-344-237-00	BRACKET, STAY (RIGHT)		33	3-701-915-01	LABEL, UL (US MODEL)	
18	4-344-240-00	BRACKET, SPEAKER			3-703-281-01	LABEL, DOC (A) (CANADIAN MODEL)	
19	4-344-244-00	CLAMP, LEAD					

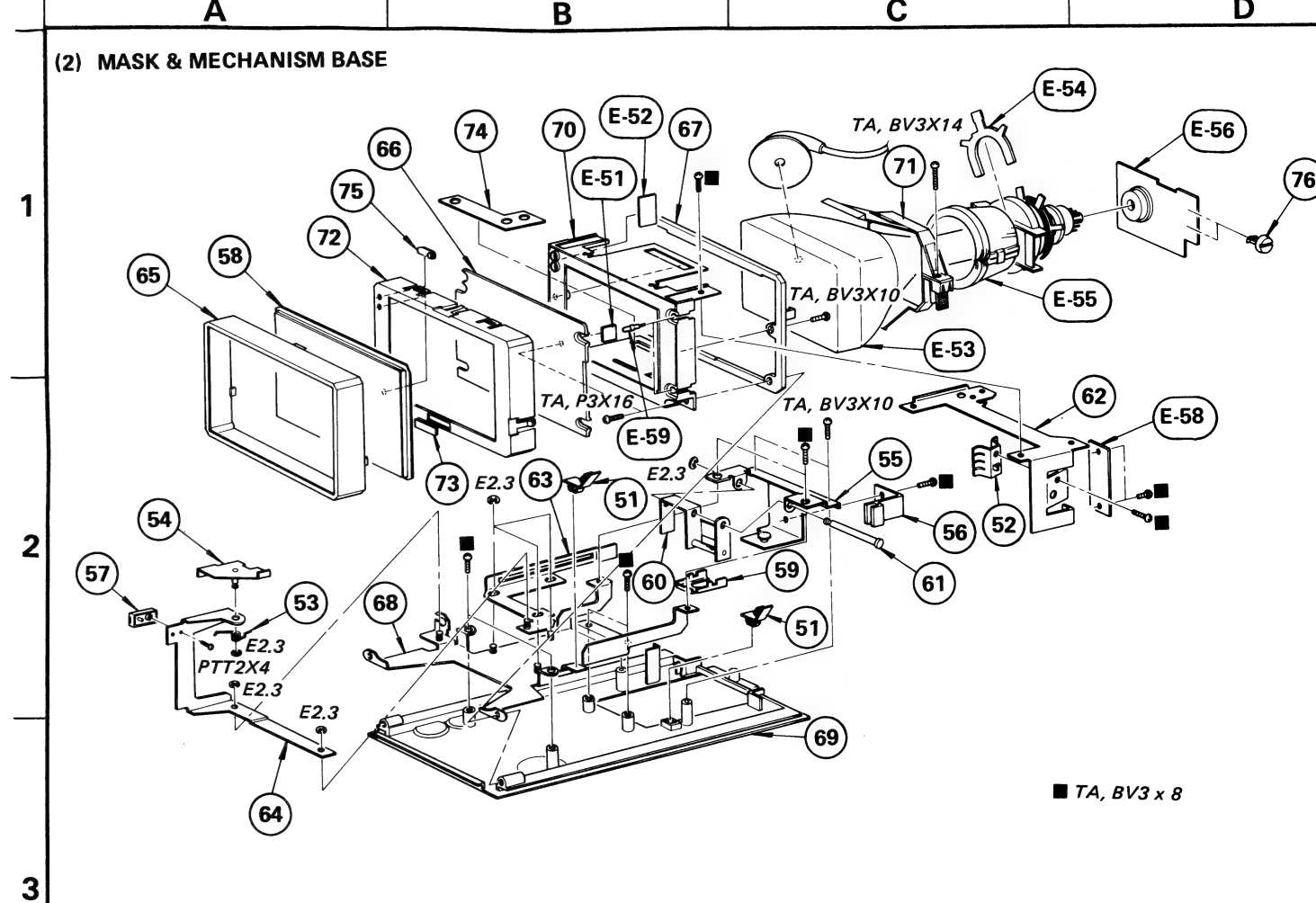
NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.



No.	Part No	Description	Remark	No.	Part No	Description	Remark
51	3-701-832-00	HINGE, CIRCUIT BOARD		64	4-344-243-00	LEVER (A), RELEASE	
52	4-302-978-00	SPRING		65	4-344-245-00	PLATE, ORNAMENTAL	
53	4-344-202-00	SPRING		66	4-344-246-11	PLATE, INDICATION, CHANNEL	
54	4-344-204-00	BRACKET, RELEASE LEVER (A)		67	4-344-248-00	SASH	
55	4-344-218-00	GUIDE, RELEASE LEVER		68	4-344-254-00	CHASSIS, RELEASE LEVER	
56	4-344-221-00	GUIDE, FIXED PLATE		69	4-344-255-11	CHASSIS	
57	4-344-224-00	BUTTON, RELEASE		70	4-344-256-11	MASK (A)	
58	4-344-226-00	FILTER		71	4-344-260-11	HOLDER, PICTURE TUBE	
59	4-344-233-00	LEVER (D), RELEASE		72	4-344-263-11	MASK (B)	
60	4-344-235-00	LEVER (C), RELEASE		73	4-344-267-00	EMBLEM, SONY	
61	4-344-238-00	SHAFT, RELEASE LEVER (C)		74	4-344-275-00	HOLDER, READ	
62	4-344-241-00	BRACKET, CRT GROUND SPRING		75	4-344-278-00	INDICATOR	
63	4-344-242-00	LEVER (B), RELEASE		76	4-344-294-02	KNOB, CONTROL	

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

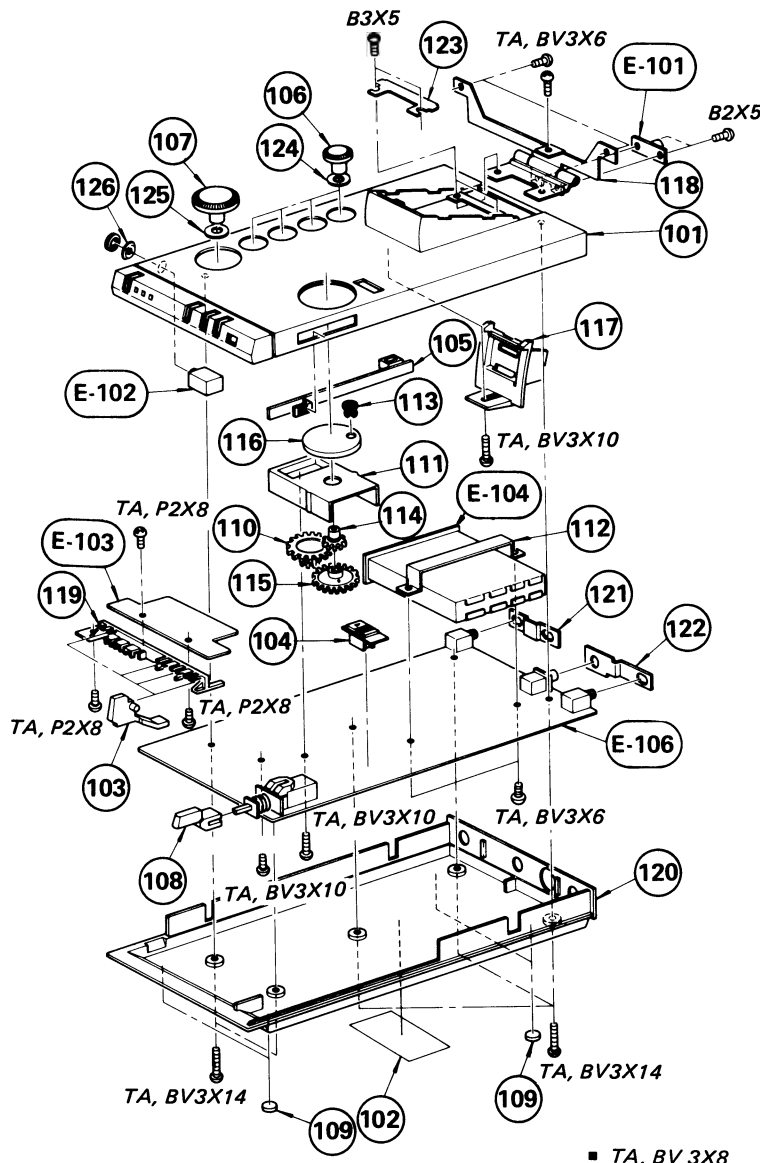
Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A

B

C

(3) BOTTOM SECTION & CONTROLS



NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.
- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

■ TA, BV 3X8

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No	Description	Remark	No.	Part No	Description	Remark
101	X-4346-801-0	CASE ASSY, CONTROL		114	4-344-230-00	GEAR (A)	
102	3-703-238-11	LABEL, MAIN CAUTION (US MODEL)		115	4-344-231-00	GEAR (C)	
	▲ 3-703-043-31	LABEL, MAIN CAUTION (CANADIAN MODEL)		116	4-344-232-00	KNOB (A), TUNING	
103	4-344-206-00	BUTTON, TUNING		117	4-344-247-00	PLATE, FIXED	
104	4-344-207-00	KNOB, SLIDE		118	4-344-251-00	HINGE	
105	4-344-208-00	KNOB, CONTROL		119	▲ 4-344-258-00	HOLDER, SWITCH	
106	4-344-209-00	KNOB (A), CONTROL		120	4-344-265-11	COVER, CONTROL	
107	4-344-210-00	KNOB (B), CONTROL		121	▲ 4-344-270-00	SHEET (A), BLIND	
108	4-344-211-02	PUSH BUTTON		122	▲ 4-344-271-00	SHEET (B), BLIND	
109	4-344-213-03	FOOT		123	▲ 4-344-280-00	PLATE, CONTACT	
110	4-344-215-00	GEAR (B)		124	2-259-503-00	WASHER, POLYAMIDE	
111	4-344-219-02	BOX, GEAR		125	3-655-862-00	SPACER, INSULATING	
112	▲ 4-344-222-00	BAND, TUNER		126	4-344-295-00	SPECER, INSULATING	
113	4-344-229-00	KNOB (B), TUNING					

A

SECTION 7
ELECTRICAL PARTS LIST

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
• A-1295-423-A		A BOARD, COMPLETE	E-106	C228	1-102-961-00	CERAMIC 27PF	5% 50V
• 3-847-723-00		PIN, LEAD		C229	1-102-951-00	CERAMIC 15PF	5% 50V
• 4-344-212-01		SPACER, JACK		C230	1-102-518-00	CERAMIC 33PF	5% 50V
• 4-344-268-00		LID, UPPER, VIF SHIELD CASE		C231	1-102-976-00	CERAMIC 180PF	5% 50V
• 4-344-269-00		CASE (MAIN), SHIELD, VIF		C232	1-101-888-00	CERAMIC 68PF	5% 50V
<u>CAPACITOR</u>				C233	1-123-316-00	ELECT 10MF	20% 16V
C101	1-123-319-00	ELECT 47MF	20% 16V	C234	1-123-351-00	ELECT 0.47MF	20% 50V
C102	1-101-004-00	CERAMIC 0.01MF	50V	C235	1-102-963-00	CERAMIC 33PF	5% 50V
C103	1-108-630-11	MYLAR 0.022MF	10% 100V	C236	1-102-113-00	CERAMIC 390PF	10% 50V
C104	1-131-215-00	TANTALUM 1MF	10% 35V	C237	1-123-353-00	ELECT 2.2MF	20% 50V
C105	1-123-316-00	ELECT 10MF	20% 16V	C238	1-123-328-00	ELECT 4.7MF	20% 25V
C106	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C239	1-102-959-00	CERAMIC 22PF	5% 50V
C107	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C240	1-102-947-00	CERAMIC 10PF	5% 50V
C108	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C241	1-101-888-00	CERAMIC 68PF	5% 50V
C109	1-123-316-00	ELECT 10MF	20% 16V	C242	1-123-447-00	ELECT 0.22MF	20% 50V
C110	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C243	1-123-317-00	ELECT 22MF	20% 16V
C111	1-123-307-00	ELECT 100MF	20% 10V	C244	1-123-447-00	ELECT 0.22MF	20% 50V
C112	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C245	1-123-316-00	ELECT 10MF	20% 16V
C113	1-102-112-00	CERAMIC 330PF	10% 50V	C246	1-123-307-00	ELECT 100MF	20% 10V
C114	1-123-352-00	ELECT 1MF	20% 50V	C247	1-101-004-00	CERAMIC 0.01MF	50V
C115	1-123-319-00	ELECT 47MF	20% 16V	C251	1-101-004-00	CERAMIC 0.01MF	50V
C116	1-123-318-00	ELECT 33MF	20% 16V	C252	1-102-668-00	CERAMIC 15PF	5% 50V
C117	1-102-112-00	CERAMIC 330PF	10% 50V	C253	1-123-316-00	ELECT 10MF	20% 16V
C118	1-101-004-00	CERAMIC 0.01MF	50V	C254	1-108-628-11	MYLAR 0.015MF	10% 100V
C119	1-101-004-00	CERAMIC 0.01MF	50V	C255	1-123-351-00	ELECT 0.47MF	20% 50V
C201	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C256	1-102-973-00	CERAMIC 100PF	5% 50V
C203	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C257	1-102-114-00	CERAMIC 470PF	10% 50V
C204	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C258	1-123-308-00	ELECT 220MF	20% 10V
C205	1-102-125-00	CERAMIC 0.0047MF	10% 50V	C259	1-101-004-00	CERAMIC 0.01MF	50V
C206	1-102-121-00	CERAMIC 0.0022MF	10% 50V	C260	1-123-316-00	ELECT 10MF	20% 16V
C207	1-102-121-00	CERAMIC 0.0022MF	10% 50V	<u>FILTER</u>			
C208	1-102-121-00	CERAMIC 0.0022MF	10% 50V	CF201	1-409-332-00	CERAMIC TRAP	
C209	1-102-942-00	CERAMIC 5PF	0.5PF 50V	CF251	1-527-260-00	CERAMIC FILTER	
C210	1-102-942-00	CERAMIC 5PF	0.5PF 50V	<u>TRIMMER</u>			
C211	1-102-525-00	CERAMIC 68PF	5% 50V	CV201	1-141-212-00	CAP, TRIMMER 130P	
C212	1-102-525-00	CERAMIC 68PF	5% 50V	<u>DIODE</u>			
C213	1-102-510-00	CERAMIC 12PF	5% 50V	D101	8-719-815-55	DIODE 1S1555	
C214	1-102-121-00	CERAMIC 0.0022MF	10% 50V	D102	8-719-815-55	DIODE 1S1555	
C215	1-102-121-00	CERAMIC 0.0022MF	10% 50V	D103	8-719-815-55	DIODE 1S1555	
C216	1-131-213-00	TANTALUM 0.47MF	10% 35V	D104	8-719-815-55	DIODE 1S1555	
C217	1-123-328-00	ELECT 4.7MF	20% 25V	D105	8-719-815-55	DIODE 1S1555	
C218	1-102-977-00	CERAMIC 200PF	5% 50V	D201 =>	8-719-920-04	DIODE ERB12-04RK	
C219	1-123-298-00	ELECT 470MF	20% 6.3V	<u>IC</u>			
C220	1-123-308-00	ELECT 220MF	20% 10V	IC101	8-759-240-11	IC TC4011BP	
C221	1-101-880-00	CERAMIC 47PF	5% 50V	IC102	8-759-240-22	IC TC4022BP	
C222	1-101-880-00	CERAMIC 47PF	5% 50V	IC201	8-759-276-07	IC TA7607AP	
C223	1-123-319-00	ELECT 47MF	20% 16V	IC202	8-759-105-56	IC CX-556	
C224	1-123-351-00	ELECT 0.47MF	20% 50V	IC251	8-759-601-95	IC CX-095D	
C225	1-102-965-00	CERAMIC 39PF	5% 50V				
C226	1-102-947-00	CERAMIC 10PF	5% 50V				
C227	1-102-951-00	CERAMIC 15PF	5% 50V				

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS
• MF : μ F, PF : μ PF

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μ H

Note: Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
<u>JACK</u>							
J101	1-507-569-00	JACK, EARPHONE		R204	1-246-778-00	CARBON 390 5%	1/8W
J201	1-507-588-32	JACK, PIN, 1P		R205	1-246-765-00	CARBON 33 5%	1/8W
J252	1-507-569-00	JACK, EARPHONE		R206	1-246-811-00	CARBON 220K 5%	1/8W
<u>COIL</u>				R207	1-246-783-00	CARBON 1K 5%	1/8W
L101	1-407-178-XX	MICRO INDUCTOR 1UH		R208	1-247-052-00	CARBON 820K 5%	1/8W
L102	1-407-189-XX	MICRO INDUCTOR 8.2UH		R209	1-246-789-00	CARBON 3.3K 5%	1/8W
L201	1-407-681-11	MICRO INDUCTOR 1UH		R210	1-246-803-00	CARBON 47K 5%	1/8W
L202	1-404-280-00	COIL, DETECTOR		R211	1-246-787-00	CARBON 2.2K 5%	1/8W
L203	1-404-280-00	COIL, DETECTOR		R212	1-246-783-00	CARBON 1K 5%	1/8W
L204	1-407-694-11	MICRO INDUCTOR 12UH		R213	1-211-401-00	CARBON 4.7 5%	1/8W F
L205	1-407-691-11	MICRO INDUCTOR 6.8UH		R214	1-246-777-00	CARBON 330 5%	1/8W
L206	1-407-699-11	MICRO INDUCTOR 33UH		R215	1-246-779-00	CARBON 470 5%	1/8W
L207	1-407-696-00	MICRO INDUCTOR 18UH		R216	1-246-785-00	CARBON 1.5K 5%	1/8W
L208	1-407-704-11	MICRO INDUCTOR 82UH		R217	1-246-830-00	CARBON 75 5%	1/8W
L209	1-407-710-11	MICRO INDUCTOR 270UH		R218	1-246-792-00	CARBON 5.6K 5%	1/8W
L210	1-407-702-11	MICRO INDUCTOR 56UH		R219	1-246-787-00	CARBON 2.2K 5%	1/8W
L211	1-407-698-11	MICRO INDUCTOR 27UH		R220	1-246-788-00	CARBON 2.7K 5%	1/8W
L212	1-407-698-11	MICRO INDUCTOR 27UH		R221	1-246-784-00	CARBON 1.2K 5%	1/8W
L213	1-407-702-11	MICRO INDUCTOR 56UH		R222	1-246-778-00	CARBON 390 5%	1/8W
L214	1-407-697-11	MICRO INDUCTOR 22UH		R223	1-246-786-00	CARBON 1.8K 5%	1/8W
L215	1-407-189-XX	MICRO INDUCTOR 8.2UH		R224	1-246-786-00	CARBON 1.8K 5%	1/8W
L251	1-403-871-00	SIFT-2 COIL		R225	1-246-788-00	CARBON 2.7K 5%	1/8W
<u>TRANSISTOR</u>				R226	1-246-781-00	CARBON 680 5%	1/8W
Q101	=>8-729-201-52	TRANSISTOR 2SA1015		R227	1-211-401-00	CARBON 4.7 5%	1/8W F
Q102	=>8-729-663-47	TRANSISTOR 2SC1364		R228	1-246-783-00	CARBON 1K 5%	1/8W
Q103	=>8-729-663-47	TRANSISTOR 2SC1364		R229	1-246-855-00	CARBON 9.1K 5%	1/8W
Q104	=>8-729-663-47	TRANSISTOR 2SC1364		R230	1-246-792-00	CARBON 5.6K 5%	1/8W
Q201	=>8-765-300-00	TRANSISTOR 2SC2009		R231	1-246-785-00	CARBON 1.5K 5%	1/8W
Q202	8-729-671-13	TRANSISTOR 2SC710		R232	1-246-786-00	CARBON 1.8K 5%	1/8W
Q203	8-729-671-13	TRANSISTOR 2SC710		R233	1-246-785-00	CARBON 1.5K 5%	1/8W
Q204	=>8-729-663-47	TRANSISTOR 2SC1364		R234	1-246-786-00	CARBON 1.8K 5%	1/8W
Q251	=>8-729-663-47	TRANSISTOR 2SC1364		R235	1-246-781-00	CARBON 680 5%	1/8W
<u>RESISTOR</u>				R236	1-246-786-00	CARBON 1.8K 5%	1/8W
R102	1-246-795-00	CARBON 10K 5%	1/8W	R237	1-246-782-00	CARBON 820 5%	1/8W
R104	1-246-802-00	CARBON 39K 5%	1/8W	R238	1-246-785-00	CARBON 1.5K 5%	1/8W
R105	1-246-809-00	CARBON 150K 5%	1/8W	R239	1-246-775-00	CARBON 220 5%	1/8W
R106	1-246-793-00	CARBON 6.8K 5%	1/8W	R240	1-246-790-00	CARBON 3.9K 5%	1/8W
R107	1-246-797-00	CARBON 15K 5%	1/8W	R241	1-246-795-00	CARBON 10K 5%	1/8W
R108	1-246-798-00	CARBON 18K 5%	1/8W	R242	1-246-779-00	CARBON 470 5%	1/8W
R109	1-246-811-00	CARBON 220K 5%	1/8W	R243	1-246-798-00	CARBON 18K 5%	1/8W
R110	1-246-807-00	CARBON 100K 5%	1/8W	R244	1-246-807-00	CARBON 100K 5%	1/8W
R111	1-246-783-00	CARBON 1K 5%	1/8W	R245	1-246-807-00	CARBON 100K 5%	1/8W
R112	1-246-783-00	CARBON 1K 5%	1/8W	R246	1-246-778-00	CARBON 390 5%	1/8W
R113	1-246-783-00	CARBON 1K 5%	1/8W	R247	1-246-799-00	CARBON 22K 5%	1/8W
R114	1-211-933-00	CARBON 47 5%	1/8W F	R248	1-246-783-00	CARBON 1K 5%	1/8W
R201	1-246-769-00	CARBON 68 5%	1/8W	R251	1-246-783-00	CARBON 1K 5%	1/8W
R202	1-246-792-00	CARBON 5.6K 5%	1/8W	R252	1-246-787-00	CARBON 2.2K 5%	1/8W
R203	1-246-784-00	CARBON 1.2K 5%	1/8W	R253	1-246-795-00	CARBON 10K 5%	1/8W
				R254	1-246-797-00	CARBON 15K 5%	1/8W
				R255	1-246-792-00	CARBON 5.6K 5%	1/8W
				R256	1-211-417-00	CARBON 22 5%	1/8W F
				R257	1-246-793-00	CARBON 6.8K 5%	1/8W
				R258	1-246-793-00	CARBON 6.8K 5%	1/8W

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS

- MF : μ F, PF : μ F

RESISTORS

- All resistors are in ohms
- F : nonflammable

COILS

- MMH : mH, UH : μ H

Note: Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

A

M

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
R259	1-246-789-00	CARBON 3.3K 5% 1/8W		C146	1-123-316-00	ELECT 10MF 20% 16V	
R262	1-246-771-00	CARBON 100 5% 1/8W		C147	1-108-618-11	MYLAR 0.0022MF 10% 100V	
R263	1-246-783-00	CARBON 1K 5% 1/8W		C148	1-123-317-00	ELECT 22MF 20% 16V	
R264	1-246-783-00	CARBON 1K 5% 1/8W		C149	1-101-003-00	CERAMIC 0.0047MF 50V	
R265	1-247-053-00	CARBON 1M 5% 1/8W		C150	1-102-125-00	CERAMIC 0.0047MF 10% 50V	
R551	1-246-790-00	CARBON 3.9K 5% 1/8W		C152	1-102-112-00	CERAMIC 330PF 10% 50V	
VARIABLE RESISTOR				C153	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
RV101	1-226-844-00	RES, VAR, CARBON 50K		C154	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
RV201	1-226-850-00	RES, ADJ, CARBON 4.7K		C155	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
RV202	1-226-851-00	RES, ADJ, CARBON 10K		DIODE			
RV203	1-226-842-00	RES, VAR, CARBON 10K		D131	8-719-815-55	DIODE 1S1555	
RV204	1-226-842-00	RES, VAR, CARBON 10K		D132	8-719-815-55	DIODE 1S1555	
RV205	1-226-842-00	RES, VAR, CARBON 10K		D133	8-719-815-55	DIODE 1S1555	
RV206	1-226-841-00	RES, VAR, CARBON 1K		D134	8-719-815-55	DIODE 1S1555	
RV207	1-226-851-00	RES, ADJ, CARBON 10K		D135	8-719-815-55	DIODE 1S1555	
RV208	1-226-857-00	RES, ADJ, CARBON 470K		D136	8-719-815-55	DIODE 1S1555	
RV251	1-226-865-00	RES, VAR, SLIDE 50K		D137	8-719-815-55	DIODE 1S1555	
RV551	1-226-843-00	RES, VIR, CARBON 30K		D138	8-719-815-55	DIODE 1S1555	
SWITCH				D139	8-719-815-55	DIODE 1S1555	
S101	1-553-371-00	SWITCH, SLIDE		D140	8-719-815-55	DIODE 1S1555	
S601	1-553-322-00	SWITCH, PUSH (POWER SWITCH)		D141	8-719-815-55	DIODE 1S1555	
FILTER				D142	8-719-815-55	DIODE 1S1555	
SF201	1-404-253-00	FILTER, SURFACE WAVE (SAWF)		D143	8-719-815-55	DIODE 1S1555	
CRYSTAL				D144	8-719-815-55	DIODE 1S1555	
X201	1-527-396-00	CRYSTAL, OSC		D145	8-719-815-55	DIODE 1S1555	
*****				D146	8-719-815-55	DIODE 1S1555	
♣:A-1306-091-A M BOARD, COMPLETE E-8				D147	8-719-815-55	DIODE 1S1555	
♣:1-551-930-00 CONNECTOR ASSY (2.5MM) 3P				D148	8-719-815-55	DIODE 1S1555	
CAPACITOR				D149	8-719-815-55	DIODE 1S1555	
C131	1-102-824-00	CERAMIC 430PF 5% 50V		D150	8-719-815-55	DIODE 1S1555	
C132	1-108-618-11	MYLAR 0.0022MF 10% 100V		D151	8-719-815-55	DIODE 1S1555	
C133	1-108-635-11	MYLAR 0.056MF 10% 100V		D152	8-719-815-55	DIODE 1S1555	
C134	1-101-880-00	CERAMIC 47PF 5% 50V		D153	=>8-719-182-07	DIODE RD8, 2E-B	
C135	1-102-965-00	CERAMIC 39PF 5% 50V		D154	8-719-815-55	DIODE 1S1555 (CANADIAN MODEL)	
C136	1-102-973-00	CERAMIC 100PF 5% 50V		D155	8-719-815-55	DIODE 1S1555 (CANADIAN MODEL)	
C137	1-108-638-00	MYLAR 0.1MF 10% 100V		IC			
C138	1-108-634-11	MYLAR 0.047MF 10% 100V		IC131	8-759-240-11	IC TC4011BP	
C139	1-108-634-11	MYLAR 0.047MF 10% 100V		IC132	8-759-240-11	IC TC4011BP	
C140	1-123-447-00	ELECT 0.22MF 20% 50V		IC133	8-759-240-11	IC TC4011BP	
C141	1-123-447-00	ELECT 0.22MF 20% 50V		IC134	=> 8-759-140-01	IC UPD4001C	
C142	1-102-973-00	CERAMIC 100PF 5% 50V		IC135	8-759-157-40	IC UPC574J	
C143	1-123-345-00	ELECT 100MF 20% 35V		CONNECTOR			
C144	1-123-306-00	ELECT 47MF 20% 10V		M1	♣:1-560-156-00	PLUG, CONNECTOR (2.5MM PITCH)	
C145	1-108-626-11	MYLAR 0.01MF 10% 100V		M2	♣:1-560-126-00	PLUG, CONNECTOR (2.5MM) 6P	
				M3	♣:1-560-290-00	PLUG, CONNECTOR (2.5MM PITCH)	
				TRANSISTOR			
				Q131	=>8-729-663-47	TRANSISTOR 2SC1364	
				Q132	=>8-729-201-52	TRANSISTOR 2SA1015	
				Q133	=>8-729-663-47	TRANSISTOR 2SC1364	
				Q135	=>8-729-663-47	TRANSISTOR 2SC1364	

NOTE:

The components identified by shading and mark ♣ are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked "♣" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

CAPACITORS

- MF : μ F, PF : μ P

RESISTORS

- All resistors are in ohms
- F : nonflammable

COILS


- MMH : mH, UH : μ H

Note: Les composants identifiés par une trame et une marque ♣ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

M C

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
<u>RESISTOR</u>							
R131	1-246-780-00	CARBON	560 5% 1/8W	R182	1-246-795-00	CARBON 10K 5% 1/8W	
R132	1-246-797-00	CARBON	15K 5% 1/8W	R183	1-246-799-00	CARBON 22K 5% 1/8W	
R133	1-246-780-00	CARBON	560 5% 1/8W	R184	1-246-449-00	CARBON 100 5% 1/4W	
R134	1-246-780-00	CARBON	560 5% 1/8W	R185	1-246-795-00	CARBON 10K 5% 1/8W	
R135	1-246-794-00	CARBON	8.2K 5% 1/8W	R186	1-246-499-00	CARBON 12K 5% 1/4W	(CANADIAN MODEL)
R136	1-246-780-00	CARBON	560 5% 1/8W	<u>VARIABLE RESISTOR</u>			
R137	1-246-780-00	CARBON	560 5% 1/8W	RV131	1-226-851-00	RES, ADJ, CARBON 10K	
R138	1-246-796-00	CARBON	12K 5% 1/8W	RV132	1-226-851-00	RES, ADJ, CARBON 10K	
R139	1-246-780-00	CARBON	560 5% 1/8W	RV133	1-226-851-00	RES, ADJ, CARBON 10K	
R140	1-246-793-00	CARBON	6.8K 5% 1/8W	RV134	1-226-853-00	RES, ADJ, CARBON 47K	
R141	1-246-792-00	CARBON	5.6K 5% 1/8W	RV135	1-226-854-00	RES, ADJ, CARBON 100K	
R142	1-246-791-00	CARBON	4.7K 5% 1/8W	RV136	1-226-430-00	RES, ADJ, CARBON 5K (CANADIAN MODEL)	
R143	1-246-797-00	CARBON	15K 5% 1/8W	RV137	1-226-851-00	RES, ADJ, CARBON 10K	
R144	1-246-808-00	CARBON	120K 5% 1/8W	*****			
R145	1-246-795-00	CARBON	10K 5% 1/8W	●:1-603-725-00	C BOARD		E-56
R146	1-246-797-00	CARBON	15K 5% 1/8W	<u>CONNECTOR</u>			
R147	1-246-545-00	CARBON	1M 5% 1/4W	C1 ●:1-560-123-00	PLUG, CONNECTOR (2.5MM) 3P		
R148	1-246-809-00	CARBON	150K 5% 1/8W	<u>CAPACITOR</u>			
R149	1-247-059-00	CARBON	620K 5% 1/8W	C701	1-161-753-00	CERAMIC 470PF 10% 3KV	
R150	1-246-781-00	CARBON	680 5% 1/8W	C702	1-102-115-00	CERAMIC 560PF 10% 50V	
R151	1-246-783-00	CARBON	1K 5% 1/8W	C703	1-102-116-00	CERAMIC 680PF 10% 50V	
R152	1-246-795-00	CARBON	10K 5% 1/8W	C704	1-102-115-00	CERAMIC 560PF 10% 50V	
R153	1-246-507-00	CARBON	27K 5% 1/4W	C705	1-123-316-00	ELECT 10MF 20% 16V	
R154	1-246-795-00	CARBON	10K 5% 1/8W	<u>JACK</u>			
R155	1-246-799-00	CARBON	22K 5% 1/8W	J701	1-509-545-00	SOCKET, CRT MOLD	
R156	1-246-811-00	CARBON	220K 5% 1/8W	<u>COIL</u>			
R157	1-246-485-00	CARBON	3.3K 5% 1/4W	L701	1-407-175-XX	MICRO INDUCTOR 330UH	
R158	1-246-799-00	CARBON	22K 5% 1/8W	<u>CONNECTOR</u>			
R159	1-246-811-00	CARBON	220K 5% 1/8W	M3 ●:1-555-383-00	CONNECTOR ASSY (2.5MM) 2P		
R160	1-246-783-00	CARBON	1K 5% 1/8W	<u>TRANSISTOR</u>			
R161	1-246-807-00	CARBON	100K 5% 1/8W	Q701	8-729-309-06	TRANSISTOR 2SC1890A	
R162	1-246-811-00	CARBON	220K 5% 1/8W	Q702	8-729-309-06	TRANSISTOR 2SC1890A	
R163	1-246-811-00	CARBON	220K 5% 1/8W	Q703	8-729-309-06	TRANSISTOR 2SC1890A	
R164	1-246-521-00	CARBON	100K 5% 1/4W	<u>RESISTOR</u>			
R165	1-246-521-00	CARBON	100K 5% 1/4W	R701	1-246-503-00	CARBON 18K 5% 1/4W	
R166	1-246-497-00	CARBON	10K 5% 1/4W	R702	1-246-503-00	CARBON 18K 5% 1/4W	
R167	1-246-786-00	CARBON	1.8K 5% 1/8W	R703	1-246-503-00	CARBON 18K 5% 1/4W	
R168	1-246-804-00	CARBON	56K 5% 1/8W	R704	1-246-481-00	CARBON 2.2K 5% 1/4W	
R169	1-246-807-00	CARBON	100K 5% 1/8W	R705	1-246-481-00	CARBON 2.2K 5% 1/4W	
R170	1-246-798-00	CARBON	18K 5% 1/8W	R706	1-246-481-00	CARBON 2.2K 5% 1/4W	
R171	1-246-790-00	CARBON	3.9K 5% 1/8W	R707	1-246-793-00	CARBON 6.8K 5% 1/8W	
R172	1-246-865-00	CARBON	62K 5% 1/8W	R708	1-246-793-00	CARBON 6.8K 5% 1/8W	
R173	1-246-798-00	CARBON	18K 5% 1/8W	R709	1-246-855-00	CARBON 9.1K 5% 1/8W	
R174	1-246-807-00	CARBON	100K 5% 1/8W	R710	1-246-793-00	CARBON 6.8K 5% 1/8W	
R175	1-246-860-00	CARBON	24K 5% 1/8W				
R176	1-246-796-00	CARBON	12K 5% 1/8W				
R177	1-246-811-00	CARBON	220K 5% 1/8W				
R178	1-246-513-00	CARBON	47K 5% 1/4W				
R179	1-246-807-00	CARBON	100K 5% 1/8W				
R180	1-246-795-00	CARBON	10K 5% 1/8W				
R181	1-246-807-00	CARBON	100K 5% 1/8W				

NOTE:

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

CAPACITORS

- MF : μ F, PF : μ F

RESISTORS

- All resistors are in ohms
- F : nonflammable

COILS

- MMH : mH, UH : μ H

- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

C

D

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
R711	1-246-840-00	CARBON 510 5% 1/8W		C514	1-108-633-11	MYLAR 0.039MF 10% 100V	
R712	1-246-839-00	CARBON 430 5% 1/8W		C515	1-108-632-11	MYLAR 0.033MF 10% 100V	
R713	1-246-840-00	CARBON 510 5% 1/8W		C516	1-108-638-00	MYLAR 0.1MF 10% 100V	
R714	1-246-793-00	CARBON 6.8K 5% 1/8W		C517	1-108-614-11	MYLAR 0.001MF 10% 100V	
R715	1-246-793-00	CARBON 6.8K 5% 1/8W		C518	1-123-307-00	ELECT 100MF 20% 10V	
				C519	1-123-324-00	ELECT 1000MF 20% 16V	
R716	1-246-793-00	CARBON 6.8K 5% 1/8W					
R717	1-246-786-00	CARBON 1.8K 5% 1/8W		C520	1-108-694-00	MYLAR 0.015MF 10% 200V	
R718	1-246-786-00	CARBON 1.8K 5% 1/8W		C521	1-108-694-00	MYLAR 0.015MF 10% 200V	
R719	1-246-786-00	CARBON 1.8K 5% 1/8W		C522	1-121-999-00	ELECT 10MF 160V NONPOLARIZED	
VARIABLE RESISTOR				C523	1-123-651-00	ELECT 0.22MF 20% 50V	
RV701	1-226-430-00	RES, ADJ, CARBON 5K		C524	1-123-316-00	ELECT 10MF 20% 16V	
RV702	1-226-430-00	RES, ADJ, CARBON 5K		C525	1-102-030-00	CERAMIC 330PF 10% 500V	
RV703	1-226-430-00	RES, ADJ, CARBON 5K		C526	1-102-115-00	CERAMIC 560PF 10% 50V	
RV704	1-226-429-00	RES, ADJ, CARBON 2K		C527	1-123-356-00	ELECT 10MF 20% 50V	
RV705	1-226-429-00	RES, ADJ, CARBON 2K		C528	1-123-352-00	ELECT 1MF 20% 50V	
SPARK GAP				C529	1-123-356-00	ELECT 10MF 20% 50V	
				C530	1-123-638-00	ELECT 3.3MF 20% 25V	
				C531	1-108-684-00	MYLAR 0.0022MF 200V	
SG701	1-519-063-XX	DISCHARGING GAP		C531	1-108-686-00	MYLAR 0.0033MF 200V	
SG702	1-519-063-XX	DISCHARGING GAP		C531	1-108-688-11	MYLAR 0.0047MF 200V	
SG703	1-519-063-XX	DISCHARGING GAP		C531	1-108-689-11	MYLAR 0.0056MF 200V	
SG704	1-519-063-XX	DISCHARGING GAP		C531	1-108-690-00	MYLAR 0.0068MF 200V	
				C531	1-108-691-11	MYLAR 0.0082MF 200V	
TRANSFORMER				C532	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
T701	1-442-071-00	TRANSFORMER, HEATER		C533	1-102-106-00	CERAMIC 100PF 10% 50V	
*****				C534	1-102-106-00	CERAMIC 100PF 10% 50V	
●:A-1345-296-A D BOARD, COMPLETE E-4				C535	1-102-694-00	MYLAR 0.015MF 10% 200V	
	1-533-146-00	HOLDER, FUSE		C551	1-108-632-11	MYLAR 0.033MF 10% 100V	
	●:3-847-723-00	PIN, LEAD		C552	1-108-634-11	MYLAR 0.047MF 10% 100V	
	4-023-455-00	PIECE, CONTACT		C553	1-123-351-00	ELECT 0.47MF 20% 50V	
	●:4-344-227-00	HEAT SINK, REG					
CAPACITOR				C554	1-123-311-00	ELECT 1000MF 20% 10V	
C451	1-123-351-00	ELECT 0.47MF 20% 50V		C555	1-123-306-00	ELECT 47MF 20% 10V	
C452	1-123-321-00	ELECT 220MF 20% 16V		C556	1-131-236-00	TANTALUM 1MF 10% 25V	
C453	1-108-614-11	MYLAR 0.001MF 10% 100V		C557	1-123-316-00	ELECT 10MF 20% 16V	
C454	1-161-055-00	CERAMIC 0.022MF 10% 50V		C558	1-123-317-00	ELECT 22MF 20% 16V	
C455	1-123-308-00	ELECT 220MF 20% 10V		C559	1-123-317-00	ELECT 22MF 20% 16V	
C456	1-123-316-00	ELECT 10MF 20% 16V		C560	1-123-308-00	ELECT 220MF 20% 10V	
C501	1-123-316-00	ELECT 10MF 20% 16V		C561	1-123-321-00	ELECT 220MF 20% 16V	
C502	1-123-352-00	ELECT 1MF 20% 50V		C562	1-108-634-11	MYLAR 0.047MF 10% 100V	
C503	1-102-114-00	CERAMIC 470PF 10% 50V		C563	1-123-316-00	ELECT 10MF 20% 16V	
C504	1-102-114-00	CERAMIC 470PF 10% 50V		C601	1-123-338-00	ELECT 2200MF 20% 25V	
C505	1-101-004-00	CERAMIC 0.01MF 50V		C602	1-123-305-00	ELECT 33MF 20% 10V	
C506	1-102-116-00	CERAMIC 680PF 10% 50V		C603	1-102-074-00	CERAMIC 0.001MF 10% 50V	
C507	1-123-352-00	ELECT 1MF 20% 50V		C604	1-102-121-00	CERAMIC 0.0022MF 10% 50V	
C508	1-102-951-00	CERAMIC 15PF 5% 50V		DIODE			
C509	1-108-622-11	MYLAR 0.0047MF 10% 100V		D501	8-719-815-55	DIODE 1S1555	
C510	1-123-351-00	ELECT 0.47MF 20% 50V		D502	8-719-815-55	DIODE 1S1555	
C511	1-102-973-00	CERAMIC 100PF 5% 50V		D503	=>8-719-911-55	DIODE U05G	
C512	1-108-634-11	MYLAR 0.047MF 10% 100V		D504	=>8-719-300-76	DIODE RH1A	
C513	1-123-354-00	ELECT 3.3MF 20% 50V		D505	=>8-719-300-76	DIODE RH1A	
				D506	=>8-719-300-76	DIODE RH1A	
				D507	8-719-133-07	DIODE RD3.3E-B	
				D601	=>8-719-175-07	DIODE RD7.5E-B	
				D602	=>8-719-930-11	DIODE E0B01-11Z	

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

• =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

• Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

• All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS

• MF : μ F, PF : μ uF

RESISTORS


• All resistors are in ohms
• F : nonflammable





COILS

• MMH : mH, UH : μ H


Note: Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

D

- The components identified by  in this manual have been carefully factory-selected for each set in order to satisfy regulations regarding X-ray radiation. Should replacement be required, replace only with the value originally used.

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
<u>FUSE</u>				R517	1-246-787-00	CARBON 2.2K 5%	1/8W
F601	 1-532-578-00	FUSE, GLASS TUBE		R518	1-246-803-00	CARBON 47K 5%	1/8W
<u>IC</u>				R519	1-246-790-00	CARBON 3.9K 5%	1/8W
IC451	8-759-903-86	IC LM386N		R520	1-246-790-00	CARBON 3.9K 5%	1/8W
IC551	8-759-110-31	IC UPC1031H2		R521	1-246-780-00	CARBON 560 5%	1/8W
<u>COIL</u>				R522	1-246-787-00	CARBON 2.2K 5%	1/8W
L501	1-408-243-00	MICRO INDUCTOR 12MMH		R523	1-246-795-00	CARBON 10K 5%	1/8W
L502	1-405-760-00	COIL, OSC		R524	1-246-794-00	CARBON 8.2K 5%	1/8W
L504	1-407-488-00	MICRO INDUCTOR 470UH		R525	1-246-803-00	CARBON 47K 5%	1/8W
L505	1-408-240-00	MICRO INDUCTOR 6.8MMH		R526	1-246-791-00	CARBON 4.7K 5%	1/8W
L506	1-407-189-XX	MICRO INDUCTOR 8.2UH		R527	1-246-785-00	CARBON 1.5K 5%	1/8W
L601	1-421-013-00	COIL, (HORIZONTAL CHOKE) 25MH		R528	1-246-785-00	CARBON 1.5K 5%	1/8W
L602	1-407-187-XX	MICRO INDUCTOR 5.6UH		R529	1-246-861-00	CARBON 30K 5%	1/8W
<u>TRANSISTOR</u>				R530	1-246-763-00	CARBON 22 5%	1/8W
Q191	8-729-113-32	TRANSISTOR 2SB733		R531	1-246-763-00	CARBON 22 5%	1/8W
Q501	=>8-729-663-47	TRANSISTOR 2SC1364		R532	1-246-778-00	CARBON 390 5%	1/8W
Q502	=>8-729-663-47	TRANSISTOR 2SC1364		R533	1-246-779-00	CARBON 470 5%	1/8W
Q503	=>8-729-201-52	TRANSISTOR 2SA1015		R534	1-246-457-00	CARBON 220 5%	1/4W
Q504	=>8-729-663-47	TRANSISTOR 2SC1364		R535	1-213-128-00	METAL 56 5%	1W F
Q505	=>8-729-201-52	TRANSISTOR 2SA1015		R536	1-246-774-00	CARBON 180 5%	1/8W
Q506	=>8-729-201-52	TRANSISTOR 2SA1015		R537	1-246-479-00	CARBON 1.8K 5%	1/4W
Q507	=>8-729-663-47	TRANSISTOR 2SC1364		R538	1-246-467-00	CARBON 560 5%	1/4W
Q508	 8-729-137-32	TRANSISTOR 2SC2373		R539	1-247-051-00	CARBON 680K 5%	1/8W
Q509	=>8-729-663-47	TRANSISTOR 2SC1364		R540	1-246-808-00	CARBON 120K 5%	1/8W
Q601	8-729-377-12	TRANSISTOR 2SA771		R541	1-246-806-00	CARBON 82K 5%	1/8W
Q602	=>8-729-663-47	TRANSISTOR 2SC1364		R542	1-246-764-00	CARBON 27 5%	1/8W
Q603	8-729-177-32	TRANSISTOR 2SD773		R543	1-246-807-00	CARBON 100K 5%	1/8W
<u>RESISTOR</u>				R544	1-214-166-00	METAL 27K 1%	1/4W
R191	1-246-803-00	CARBON 47K 5%	1/8W	R545 	METAL		1/4W
R451	1-246-795-00	CARBON 10K 5%	1/8W	R546	1-246-779-00	CARBON 470 5%	1/8W
R452	1-246-799-00	CARBON 22K 5%	1/8W	R547	1-246-756-00	CARBON 5.6 5%	1/8W
R453	1-246-756-00	CARBON 5.6 5%	1/8W	R552	1-246-795-00	CARBON 10K 5%	1/8W
R501	1-246-801-00	CARBON 33K 5%	1/8W	R553	1-246-793-00	CARBON 6.8K 5%	1/8W
R502	1-246-795-00	CARBON 10K 5%	1/8W	R554	1-246-788-00	CARBON 2.7K 5%	1/8W
R503	1-246-788-00	CARBON 2.7K 5%	1/8W	R555	1-246-800-00	CARBON 27K 5%	1/8W
R504	1-246-785-00	CARBON 1.5K 5%	1/8W	R556	1-246-784-00	CARBON 1.2K 5%	1/8W
R505	1-246-787-00	CARBON 2.2K 5%	1/8W	R557	1-246-775-00	CARBON 220 5%	1/8W
R506	1-246-777-00	CARBON 330 5%	1/8W	R558	1-246-413-00	CARBON 3.3 5%	1/4W
R507	1-246-803-00	CARBON 47K 5%	1/8W	R559	1-246-787-00	CARBON 2.2K 5%	1/8W
R508	1-247-047-00	CARBON 330K 5%	1/8W	R560	1-246-792-00	CARBON 5.6K 5%	1/8W
R509	1-246-786-00	CARBON 1.8K 5%	1/8W	R561	1-246-785-00	CARBON 1.5K 5%	1/8W
R510	1-246-785-00	CARBON 1.5K 5%	1/8W	R562	1-247-047-00	CARBON 330K 5%	1/8W
R511	1-246-794-00	CARBON 8.2K 5%	1/8W	R563	1-246-794-00	CARBON 8.2K 5%	1/8W
R512	1-246-786-00	CARBON 1.8K 5%	1/8W	R601	1-246-797-00	CARBON 15K 5%	1/8W
R513	1-246-792-00	CARBON 5.6K 5%	1/8W	R602	1-246-771-00	CARBON 100 5%	1/8W
R514	1-246-792-00	CARBON 5.6K 5%	1/8W	R603 	METAL		1/4W
R515	1-246-795-00	CARBON 10K 5%	1/8W	R604	1-214-132-00	METAL 1K 1%	1/4W
R516	1-246-799-00	CARBON 22K 5%	1/8W	R605	1-211-532-00	CARBON 270 5%	1/4W F
				R606	1-211-508-00	CARBON 27 5%	1/4W F
				<u>VARIABLE RESISTOR</u>			
				RV552	1-226-851-00	RES, ADJ, CARBON 10K	
				RV553	1-226-846-00	RES, ADJ, CARBON 470	

NOTE:

The components identified by shading and mark  are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

CAPACITORS


- MF : μF , PF : μuF

RESISTORS

- All resistors are in ohms
- F : nonflammable

COILS

- MMH : mH, UH : μH

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

D

J

H

L1

L2

X1

X2

S

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
RV601	1-226-846-00	RES, ADJ, CARBON 470		⚡:1-602-404-00	L1 BOARD		E-52
	<u>TRANSFORMER</u>				<u>DIODE</u>		
T501	1-437-021-00	TRANSFORMER, HORIZONTAL DRIVE		D907	8-719-812-41	DIODE TLR124	
T502	⚠.1-439-262-12	TRANSFORMER ASSY, FLYBACK		D908	8-719-812-42	DIODE TLY124	
	<u>THERMISTOR</u>			*****			
TH551	1-800-070-XX	THERMISTOR TH-4700		⚡:1-602-405-00	L2 BOARD		E-51
TH601	1-800-193-00	THERMISTOR (DIRECT-HEATING DISK) S-68			<u>DIODE</u>		
*****				D906	8-719-812-43	DIODE TLG124	
⚡:1-602-403-00	J BOARD		E-103	*****			
D901	8-719-812-42	DIODE TLY124		⚡:1-602-408-00	X1 BOARD		E-6
D902	8-719-812-41	DIODE TLR124		⚡:1-560-124-00	PLUG, CONNECTOR (2.5MM PITCH)		
D903	8-719-812-43	DIODE TLG124		⚡:1-560-156-00	PLUG, CONNECTOR (2.5MM PITCH)		
D904	8-719-815-55	DIODE 1S1555		*****			
D905	8-719-815-55	DIODE 1S1555		⚡:1-602-409-00	X2 BOARD		E-58
D910	8-719-815-55	DIODE 1S1555		⚡:1-560-123-00	PLUG, CONNECTOR (2.5MM PITCH)		
	<u>TRANSISTOR</u>			⚡:1-560-123-00	PLUG, CONNECTOR (2.5MM PITCH)		
Q901	=>8-729-663-47	TRANSISTOR 2SC1364			<u>DIODE</u>		
Q902	=>8-729-663-47	TRANSISTOR 2SC1364		D909	8-719-815-55	DIODE 1S1555	
Q903	=>8-729-201-52	TRANSISTOR 2SA1015			<u>RESISTOR</u>		
Q904	=>8-729-663-47	TRANSISTOR 2SC1364		R192	1-246-778-00	CARBON 390 5% 1/8W	
Q905	=>8-729-663-47	TRANSISTOR 2SC1364		*****			
	<u>RESISTOR</u>			⚡:1-602-407-00	S BOARD		
R901	1-246-778-00	CARBON 390 5% 1/8W		⚠.1-463-334-00	TUNER (BT-862)		
R902	1-246-795-00	CARBON 10K 5% 1/8W			<u>SEPARATOR</u>		
R903	1-246-789-00	CARBON 3.3K 5% 1/8W		LC101	1-417-060-00	SEPARATOR, UV	
R905	1-246-796-00	CARBON 12K 5% 1/8W		*****			
R906	1-246-793-00	CARBON 6.8K 5% 1/8W			<u>MISCELLANEOUS</u>		
R907	1-246-793-00	CARBON 6.8K 5% 1/8W		1-452-192-00	MAGNET, CORRECT BMC		E-54
R908	1-246-795-00	CARBON 10K 5% 1/8W		1-452-032-00	MAGNET, DISK; 10 mmφ		E-1
R909	1-246-795-00	CARBON 10K 5% 1/8W		1-501-229-00	ANTENNA, TELESCOPIC		E-9
	<u>SWITCH</u>			⚡:1-551-930-00	CONNECTOR ASSY (2.5MM) 3P		
S901	1-552-868-31	SWITCH, PUSH		⚡:1-555-198-00	CONNECTOR ASSY (2.5MM) 4P		
S902	1-552-868-31	SWITCH, PUSH		⚡:1-555-356-00	CONNECTIR ASSY (2.5MM) 6P		
S903	1-552-868-31	SWITCH, PUSH		⚡:1-555-394-00	CONNECTOR ASSY (2.5MM) 12P		
S904	1-552-868-31	SWITCH, PUSH		⚡:1-555-395-00	CONNECTOR ASSY (2.5MM) 12P		
*****				⚡:1-555-424-00	LEAD, WITH TERMINAL		
⚡:1-602-402-00	H BOARD		E-7	J253	1-507-569-00	JACK, EARPHONE	E-102
	<u>RESISTOR</u>						
R713	1-202-726-00	COMPSITION 3.9M 10% 1/2W					
	<u>VARIABLE RESISTOR</u>						
RV706	1-226-659-21	RES, ADJ, METAL GLAZE 7.5M					
RV707	1-226-866-00	RES, ADJ, METAL GLAZE 30M					

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked "⚡" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

- CAPACITORS
- MF : μ F, PF : μ μ F

- RESISTORS
- All resistors are in ohms
 - F : nonflammable

- COILS
- MMH : mH, UH : μ H

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

8

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
J651	1-507-559-00	SOCKET, DC	E-101				
L901	1-451-184-00	DEFLECTION YOKE (SY-110)	E-55				
L902	1-407-364-00	COIL, SPOOK CHOKE					
L903	1-407-364-00	COIL, SPOOK CHOKE					
PL901	1-518-306-00	LAMP, PILOT	E-59				
PL902	1-518-306-00	LAMP, PILOT	E-59				
RV901	1-226-882-00	RESISTOR, HIGH-VOLTAGE	E-5				
SP901	1-502-703-00	SPEAKER	E-2				
V901	1-8-733-301-05	PICTURE TUBE	E-53				

ACCESSORIES AND PACKING MATERIALS

Part No	Description	Remark
A-1009-045-A	AC ADAPTOR, AC-123W (CANADIAN MODEL)	
A-1009-046-A	AC ADAPTOR, AC-123W (US MODEL)	
A-1009-047-A	CASE, BATTERY; BCP-5W	
X-4023-009-0	HOLDER ASSY, BATTERY	
1-417-078-00	MIXER, ANTENNA	
1-504-044-00	EARPHONE, MAGNETIC (ME-21)	
2-240-517-00	CASE, CARRYING	
3-701-625-00	BAG, POLYETHYLENE	
3-701-635-00	BAG, POLYETHYLENE	
3-701-730-00	BAG, POLYETHYLENE, IBM CARD (US MODEL)	
4-344-284-00	BAG, PROTECTION	
4-344-286-00	CUSHION (UPPER, FRONT)	
4-344-287-00	CUSHION (UPPER, REAR)	
4-344-288-00	CUSHION (LOWER)	
4-346-807-00	INDIVIDUAL CARTON (US MODEL)	
4-346-808-00	CARTON, ACCESSORY	
4-346-809-00	PARTITION	
4-346-812-00	INDIVIDUAL CARTON (CANADIAN MODEL)	
4-491-213-21	INSTRUCTION (US MODEL)	
4-491-462-02	SCHEMATIC DIAGRAM (SONAM); (US MODEL)	
4-491-465-21	TAG, CAUTION	
4-495-988-21	MANUAL, INSTRUCTION (US MODEL)	
4-495-988-31	MANUAL, INSTRUCTION (CANADIAN MODEL)	
4-854-905-00	SHEET (B), PROTECTION	
7-822-282-01	IBM, CARD (WHITE); (US MODEL)	
7-822-282-02	IBM, CARD (PINK); (US MODEL)	
7-822-282-03	IBM, CARD (GREEN); (US MODEL)	

NOTE:

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

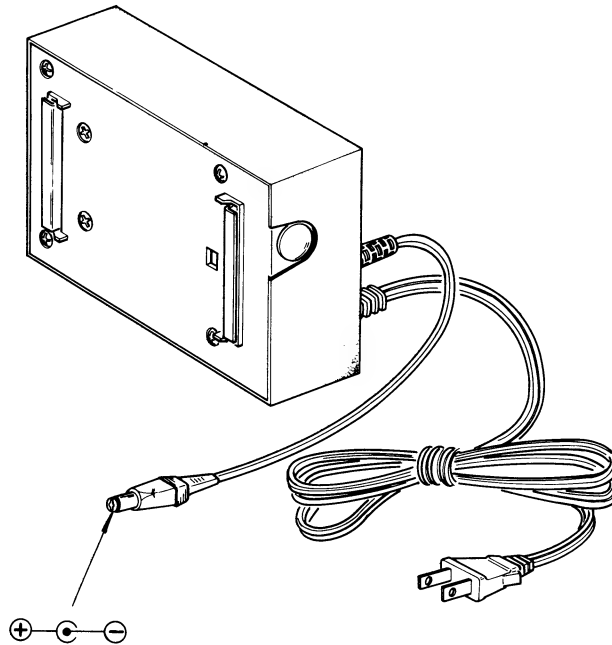
CAPACITORS
• MF : μ F, PF : μ μ F

RESISTORS
• All resistors are in ohms
• F : nonflammable

COILS
• MMH : mH, UH : μ H

Note: Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

AC-123W



AC POWER ADAPTOR

SPECIFICATIONS

Semiconductors:	diodes
Power Requirements:	120V ac 60Hz
DC Output:	12V 1A
Dimensions:	Approx. 117(w) x 84(h) x 49(d) mm Approx. 4 ⁵ / ₈ (w) x 3 ³ / ₈ (h) x 1 ¹⁵ / ₁₆ (d) inches
Weight:	Approx. 1kg (2 lb 3 oz)

F

[POWER RECT]

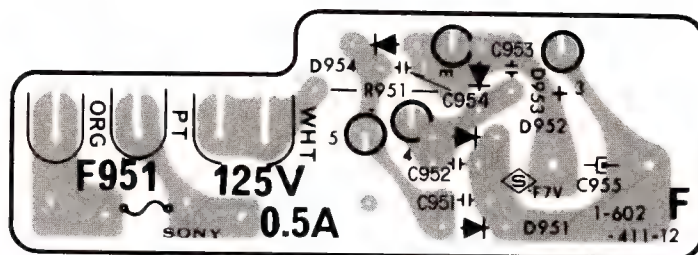
A

B

C

D

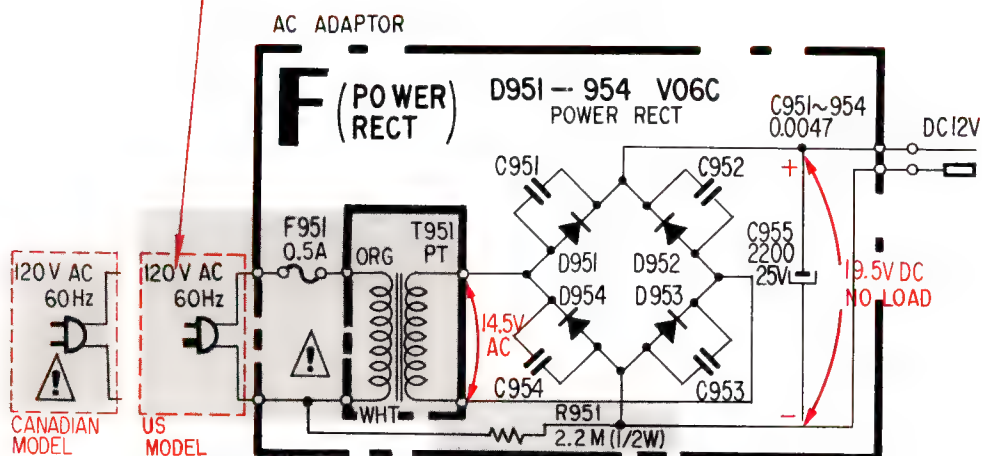
1. MOUNTING DIAGRAM



2. SCHEMATIC DIAGRAM


US MODEL CAUTION

This set is equipped with a polarized ac power cord plug (one blade of the plug is wider than the other). When replacing the ac power cord, be sure to connect it with specified part number as shown in this diagram.



Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

- All capacitors are in μF .
- All resistors are in ohms.
- Readings are taken with a 20,000 ohm-per-volt VOM.
- Voltage variations may be noted due to normal production tolerances.

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

No.	Part No	Description	Remark	No.	Part No	Description	Remark
1	A.2-245-509-11	HOLDER, CORD (US MODEL)		9	2-274-406-11	CASE, ADAPTER	
2	A.2-098-510-01	BUSHING CORD (CANADIAN MODEL)		10	2-274-409-01	LABEL, MODEL NUMBER (US MODEL)	
	2-098-513-00	BUSHING			2-274-410-01	LABEL, MODEL NUMBER (CANADIAN MODEL)	
3	2-245-517-00	CLAMP, CABLE (US MODEL)		11	2-274-408-00	INSULATOR	
	2-245-503-03	CLAMP, CABLE (CANADIAN MODEL)		12	3-486-138-00	SCREW	
4	2-274-401-00	BUTTON, LEVER		13	3-701-631-00	BAG, POLYETHYLENE	
5	2-274-402-00	LEVER (B)		14	4-344-272-00	NET, BLIND	
6	2-274-403-00	LEVER (A)		15	4-812-546-01	SPRING COMPRESSION, (B)	
7	2-274-404-00	BRACKET, PC BOARD		16	3-703-238-00	LABEL, MAIN CAUTION (US MODEL)	
8	2-274-405-11	COVER, ADAPTER CASE			1-703-043-21	LABEL, MAIN CAUTION (CANADIAN MODEL)	

- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "●" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

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F

4. ELECTRICAL PARTS LIST

Ref.No	Part No	Description	Remark	Ref.No	Part No	Description	Remark
	A-1009-045-A	AC ADAPTER, AC-123W (CANADIAN MODEL)					
	A-1009-046-A	AC ADAPTER, AC-123W (US MODEL)					
	⚡:1-602-411-00	F BOARD	E-2				
	1-533-087-00	HOLDER,FUSE					
		<u>CAPACITOR</u>					
C951	1-101-003-00	CERAMIC 0.0047MF	50V				
C952	1-101-003-00	CERAMIC 0.0047MF	50V				
C953	1-101-003-00	CERAMIC 0.0047MF	50V				
C954	1-101-003-00	CERAMIC 0.0047MF	50V				
C955	1-125-194-00	ELECT(BLOCK) 2200MF	25V				
		<u>DIODE</u>					
D951	=>8-719-900-93	DIODE V09C					
D952	=>8-719-900-93	DIODE V09C					
D953	=>8-719-900-93	DIODE V09C					
D954	=>8-719-900-93	DIODE V09C					
		<u>FUSE</u>					
F951	⚠.1-532-580-00	FUSE, GLASS TUBE; 0.5A					
		<u>RESISTOR</u>					
R951	⚠.1-202-723-00	COMPOSITION 2.2M 10% 1/2W					

		<u>MISCELLANEOUS</u>					
	⚠.1-534-986-XX	CORD, POWER (CANADIAN MODEL)					
	⚠.1-551-478-00	CORD, POWER (US MODEL)	E-3				
	1-555-307-21	CORD, WITH PLUG	E-4				
T951	⚠.1-446-827-00	TRANSFORMER, POWER	E-1				
		<u>PACKING MATERIAL</u>					
	<u>Part No</u>	<u>Description</u>	<u>Remark</u>				
	2-502-809-00	BAG, POLYETHYLENE					

NOTE:

The components identified by shading and mark ⚠ are critical for safety. Replace only with part number specified.

- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

CAPACITORS
• MF : μ F, PF : μ F

RESISTORS
• All resistors are in ohms
• F : nonflammable

- Items marked "⚡" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

COILS
• MMH : mH, UH : μ H

Note: Les composants identifiés par une trame et une marque ⚠ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

BCP-5W



BATTERY CASE

SPECIFICATIONS

Semiconductors:	transistor, LED
Charging Circuit:	only for BP-36
Input:	DC IN jack
Output:	DC OUT cord with dc plug
Dimensions:	Approx. 114(w) x 52(h) x 285(d) mm Approx. 4½(w) x 2⅞(h) x 11¼(d) inches
Weight:	Approx. 1.7kg (3 lb 12 oz) incl. BP-36 Approx. 1.4kg (3 lb 1 oz) incl. nine dry batteries size "D" (IEC designation LR-20)

GR

[LED DRIVE]

L3

[LED, FUSE]

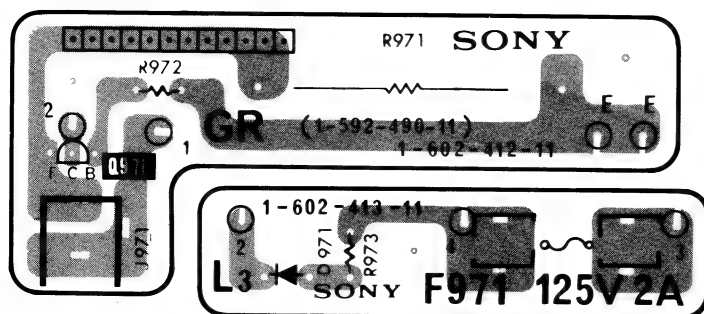
A

B


C

D



1. MOUNTING DIAGRAM

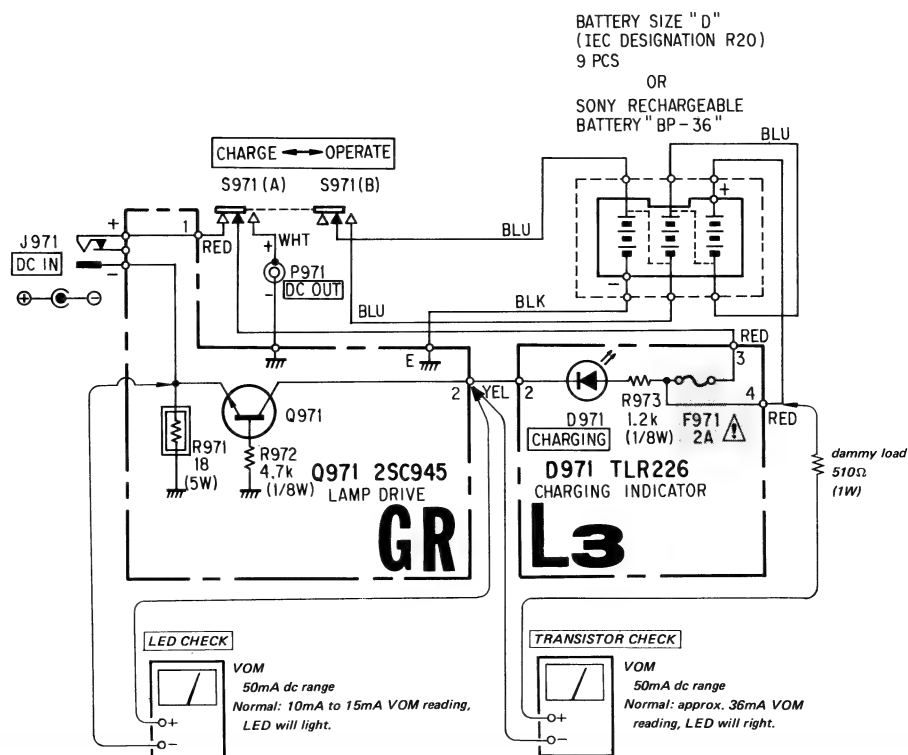


2. SCHEMATIC DIAGRAM

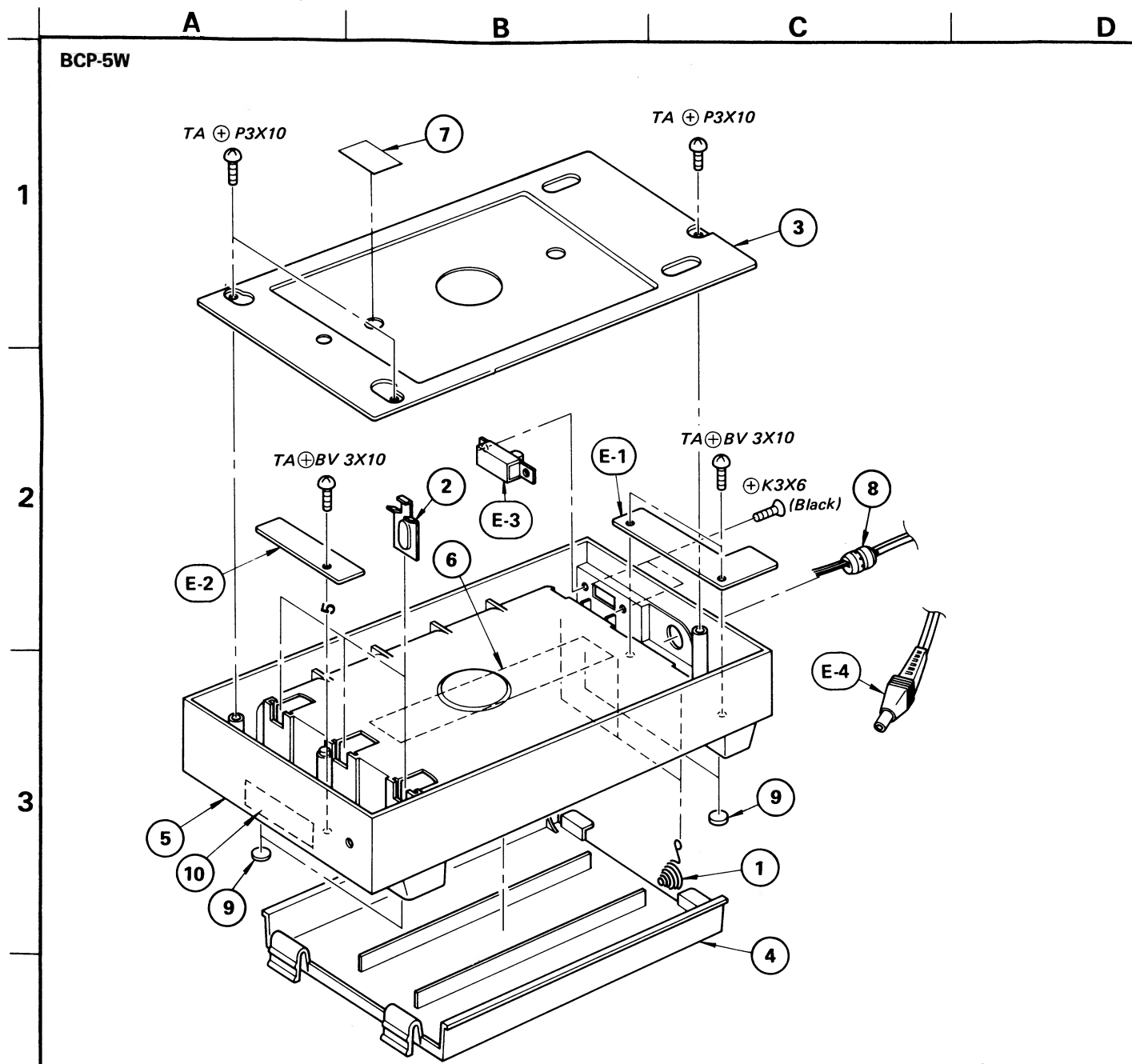
Note: The components identified by shading and mark  are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque  sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

- All resistors are in ohms.
-  : nonflammable resistor.
-  : panel designation.



3. EXPLODED VIEW



No.	Part No	Description	Remark	No.	Part No	Description	Remark
1	2-274-301-00	SPRING		6	4-346-805-01	LABEL, CAUTION, BATTERY (US MODEL)	
2	2-274-302-00	PLATE, POLE, BATTERY		7	4-346-806-01	LABEL, CAUTION, BATTERY(CANADIAN MODEL)	
3	2-274-303-00	COVER, BATTERY CASE		8	4-346-804-00	LABEL, MODEL NUMBER	
4	2-274-304-00	LID, BATTERY CASE		9	3-655-235-00	BUSHING	
5	2-274-305-00	CASE (MAIN), BATTERY		10	4-344-213-02	FOOT	
					3-703-180-03	LABEL, FUSE CAUTION	

NOTE:

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remark column.

- As to the part numbered with E-, refer to the electrical parts list.
- Items marked "▲" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

The components identified by shading and mark ▲ are critical for safety. Replace only with part number specified.

Note: Les composants identifiés par une trame et une marque ▲ sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

4. ELECTRICAL PARTS LIST

BCP-5W

<u>Ref.No</u>	<u>Part No</u>	<u>Description</u>	<u>Remark</u>
	A-1009-047-A	CASE, BATTERY; BCP-5W	
•	1-602-412-00	<u>GR BOARD</u>	E-1
		<u>JACK</u>	
J971	1-507-563-00	DC JACK	
		<u>TRANSISTOR</u>	
Q971	=>8-729-663-47	TRANSISTOR 2SC1364	
		<u>RESISTOR</u>	
R971	1-217-069-11	WIREWOUND 18 10% 5W F	
R972	1-246-791-00	CARBON 4.7K 5% 1/8W	

•	1-602-413-00	<u>L3 BOARD</u>	E-2
	1-533-146-00	HOLDER, FUSE	
		<u>DIODE</u>	
D971	8-719-812-26	DIODE TLR226	
		<u>FUSE</u>	
F971	1-532-578-00	FUSE, GLASS TUBE; 2A	
		<u>RESISTOR</u>	
R973	1-246-784-00	CARBON 1.2K 5% 1/8W	

<u>Ref.No</u>	<u>Part No</u>	<u>Description</u>	<u>Remark</u>
<u>MISCELLANEOUS</u>			
S971	1-516-046-00	SWITCH, SLIDE	E-3
P971	1-555-307-21	CORD, WITH PLUG	E-4
<u>PACKING MATERIAL</u>			
		<u>Part No</u> <u>Description</u>	<u>Remark</u>
	2-274-309-01	BAG, PROTECTION	

The components identified by shading and mark **A** are critical for safety. Replace only with part number specified.

- =>: Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.
- Items marked "•" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note: Les composants identifiés par une trame et une marque **A** sont critiques pour la sécurité. Ne les remplacer que par une pièce portant le numéro spécifié.

Battery life

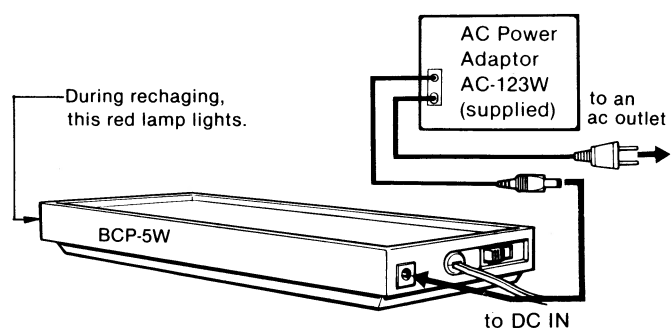
Battery life is dependent on operating conditions and the type of batteries used. The following table shows some examples.

BP-36	Eveready Heavy Duty No.1250	Eveready alkaline No.E95
2.5 hours	4.0 hours	6.0 hours

If the picture becomes smaller, this shows that the battery is exhausted. In this case, replace all the batteries with new ones or recharge the battery pack. In battery pack operation, do not operate the set after the picture has become smaller, since this will reduce the serviceable life of the battery pack.

Recharging of the battery pack

After each use, recharge the BP-36 battery pack through the built-in charger. Make the connections as illustrated and set the Charging Switch to CHARGE. Recharging will begin. Charging time is approximately 14 hours.



After recharging, reset the Charging Switch to OPERATE.

The Charging lamp may not light when a very heavily discharged battery is put on charge. Should this occur, allow several hours to reach a charging condition, as indicated by the Charging lamp. If the battery still cannot be recharged, it will have to be replaced.

STANDARD PARTS LIST

**** CAPACITOR ELECT ****

uF	6.3V	10V	16V	25V	35V	50V	100V	160V	250V	350V
	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.	Part No.
0.47						1-121-726				
1.0						391	1-123-249	1-123-252	1-123-003	1-121-168
2.2						450	250	026		1-123-028
3.3				1-121-392		393	1-121-995		004	006
4.7				395		396	1-123-255	1-121-246	1-121-759	007
10			1-121-651	398		738	1-121-126	999	1-123-254	008
22			479	480	1-121-662	152	996	1-123-253		022
33			403	404	652	405	997	919		
47		1-121-352	409	410	653	411	1-123-251			
100		414	415	416	357	417	084			
220	1-121-419	420	421	422	261	423				
330	751	805	521	654	655	656				
470	424	425	426	733	361	810				
1000		736	245	657	388	1-123-061				
2200	658	659	660	1-123-067	984					
3300	661	1-121-075	1-123-071							

**** CAPACITOR ****

MYLAR			
uF	50V 10%	100V 10%	200V 10%
0.001	1-108-227	1-108-365	1-108-409
0.0012	351	365	410
0.0015	228	367	411
0.0018	352	368	412
0.0022	230	369	413
0.0027	353	370	414
0.0033	232	371	415
0.0039	354	372	416
0.0047	234	373	417
0.0056	355	374	418
0.0068	237	375	419
0.0082	356	376	420
0.01	239	377	421
0.012	357	378	422
0.015	240	379	423
0.018	358	380	424
0.022	242	381	425
0.027	359	382	426
0.033	244	383	427
0.039	360	384	428
0.047	246	385	429
0.056	361	386	430
0.068	249	387	431
0.082	362	388	432
0.1	251	389	433
0.12	363	390	434
0.15	252	391	435
0.18	364	392	436
0.22	254	393	437
0.27	854		
0.33	855		
0.39	856		
0.47	857		

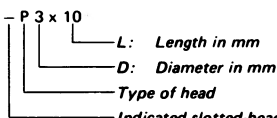
CERAMIC					
	pF	Part No.		pF	Part No.
	0.5	1-101-837		100	1-102-973
	0.75	586		110	815
	1.0	1-102-934		120	816
	1.5	1-101-576		130	1-101-081
	2.0	1-102-935		150	361
S	3	936	S	160	367
L	4	937	L	180	1-102-976
	5	942		200	977
	6	943		220	978
	7	944		240	979
	8	945		270	980
	9	946		300	981
	10	947		330	820
	11	948		360	821
	12	949		390	822
	13	950		430	823
	15	951		470	824
	16	952		510	1-101-059
	18	953			
	20	958		560	1-102-115
	22	959		630	116
	24	960		820	117
	27	961		1000	074
	30	962		1200	118
	33	963		1500	119
	36	964	B	1800	120
	39	965		2200	121
	43	966		2700	122
	47	1-101-880		3300	123
	51	882		3900	124
	56	884		4700	125
	62	886		5600	126
	68	888		6800	127
	75	890		8200	128
	82	1-102-971		10000	129
	91	972			

1/4 WATT CARBON RESISTORS

Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.	Ω	Part No.
1.0	1-246-401-00	10	1-246-425-00	100	1-246-449-00	1.0k	1-246-473-00	10k	1-246-497-00	100k	1-246-521-00	1.0M	1-246-545-00
1.1	1-246-402-00	11	1-246-426-00	110	1-246-450-00	1.1k	1-246-474-00	11k	1-246-498-00	110k	1-246-522-00	1.1M	1-210-814-00
1.2	1-246-403-00	12	1-246-427-00	120	1-246-451-00	1.2k	1-246-475-00	12k	1-246-499-00	120k	1-246-523-00	1.2M	1-210-815-00
1.3	1-246-404-00	13	1-246-428-00	130	1-246-452-00	1.3k	1-246-476-00	13k	1-246-500-00	130k	1-246-524-00	1.3M	1-210-816-00
1.5	1-246-405-00	15	1-246-429-00	150	1-246-453-00	1.5k	1-246-477-00	15k	1-246-501-00	150k	1-246-525-00	1.5M	1-210-817-00
1.6	1-246-406-00	16	1-246-430-00	160	1-246-454-00	1.6k	1-246-478-00	16k	1-246-502-00	160k	1-246-526-00	1.6M	1-210-818-00
1.8	1-246-407-00	18	1-246-431-00	180	1-246-455-00	1.8k	1-246-479-00	18k	1-246-503-00	180k	1-246-527-00	1.8M	1-210-819-00
2.0	1-246-408-00	20	1-246-432-00	200	1-246-456-00	2.0k	1-246-480-00	20k	1-246-504-00	200k	1-246-528-00	2.0M	1-210-820-00
2.2	1-246-409-00	22	1-246-433-00	220	1-246-457-00	2.2k	1-246-481-00	22k	1-246-505-00	220k	1-246-529-00	2.2M	1-210-821-00
2.4	1-246-410-00	24	1-246-434-00	240	1-246-458-00	2.4k	1-246-482-00	24k	1-246-506-00	240k	1-246-530-00	2.4M	1-244-754-00
2.7	1-246-411-00	27	1-246-435-00	270	1-246-459-00	2.7k	1-246-483-00	27k	1-246-507-00	270k	1-246-531-00	2.7M	1-244-755-00
3.0	1-246-412-00	30	1-246-436-00	300	1-246-460-00	3.0k	1-246-484-00	30k	1-246-508-00	300k	1-246-532-00	3.0M	1-244-756-00
3.3	1-246-413-00	33	1-246-437-00	330	1-246-461-00	3.3k	1-246-485-00	33k	1-246-509-00	330k	1-246-533-00	3.3M	1-244-757-00
3.6	1-246-414-00	36	1-246-438-00	360	1-246-462-00	3.6k	1-246-486-00	36k	1-246-510-00	360k	1-246-534-00	3.6M	1-244-758-00
3.9	1-246-415-00	39	1-246-439-00	390	1-246-463-00	3.9k	1-246-487-00	39k	1-246-511-00	390k	1-246-535-00	3.9M	1-244-759-00
4.3	1-246-416-00	43	1-246-440-00	430	1-246-464-00	4.3k	1-246-488-00	43k	1-246-512-00	430k	1-246-536-00	4.3M	1-244-760-00
4.7	1-246-417-00	47	1-246-441-00	470	1-246-465-00	4.7k	1-246-489-00	47k	1-246-513-00	470k	1-246-537-00	4.7M	1-244-761-00
5.1	1-246-418-00	51	1-246-442-00	510	1-246-466-00	5.1k	1-246-490-00	51k	1-246-514-00	510k	1-246-538-00	5.1M	1-244-762-00
5.6	1-246-419-00	56	1-246-443-00	560	1-246-467-00	5.6k	1-246-491-00	56k	1-246-515-00	560k	1-246-539-00		
6.2	1-246-420-00	62	1-246-444-00	620	1-246-468-00	6.2k	1-246-492-00	62k	1-246-516-00	620k	1-246-540-00		
6.8	1-246-421-00	68	1-246-445-00	680	1-246-469-00	6.8k	1-246-493-00	68k	1-246-517-00	680k	1-246-541-00		
7.5	1-246-422-00	75	1-246-446-00	750	1-246-470-00	7.5k	1-246-494-00	75k	1-246-518-00	750k	1-246-542-00		
8.2	1-246-423-00	82	1-246-447-00	820	1-246-471-00	8.2k	1-246-495-00	82k	1-246-519-00	820k	1-246-543-00		
9.1	1-246-424-00	91	1-246-448-00	910	1-246-472-00	9.1k	1-246-496-00	91k	1-246-520-00	910k	1-246-544-00		

HARDWARE NOMENCLATURE

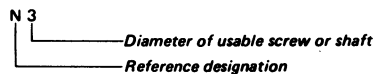
Screw:



Indicated slotted-head only.

Unless otherwise indicated, it means cross-recessed head (Phillips type).

Nut, Washer, Retaining ring:



Reference Designation	Shape	Description	Remarks
SCREWS			
P		pan-head screw	binding-head (B) screw for replacement
PWH		pan-head screw with washer face	binding-head (B) screw and flat washer for replacement
PS PSP		pan-head screw with spring washer	binding-head (B) screw and spring washer for replacement
PSW PSPW		pan-head screw with spring and flat washers	binding-head (B) screw and spring and flat washers for replacement
R		round-head screw	binding-head (B) screw for replacement
K		flat-countersunk-head screw	
RK		oval-countersunk-head screw	
B		binding-head screw	
T		truss-head screw	binding-head (B) screw for replacement
F		flat-fillister-head screw	
RF		fillister-head screw	
BV		braizer-head screw	

Reference Designation	Shape	Description	Remarks
SELF-TAPPING SCREWS			
TA		self-tapping screw	ex: TA, P 3 x 10
PTP		pan-head self-tapping screw	binding-head self-tapping (TA, B) screw for replacement
PTPWH		pan-head self-tapping screw with washer face	binding-head self-tapping (TA, B) screw and flat washer for replacement
PTTWH		pan-head thread-rolling screw with washer face	binding-head (B) screw and flat washer for replacement
SET SCREWS			
SC		set screw	
SC		hexagon-socket set screw	ex: SC 2.6 x 4, hexagon socket
NUT			
N		nut	
WASHERS			
W		flat washer	
SW		spring washer	
LW		internal-tooth lock washer	ex: LW3, internal
LW		external-tooth lock washer	ex: LW3, external
RETAINING RINGS			
E		retaining ring	
G		grip-type retaining ring	

Sony Corporation

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